

BULLETIN OF THE CORNELL UNIVERSITY.

(SCIENCE.)

Vol. III, No. I.

SOME FUNGI FROM ALABAMA

COLLECTED CHIEFLY DURING THE YEARS

1889-1892.

BY

GEO. F. ATKINSON.

ITHACA, N. Y.
ANDRUS & CHURCH.
JUNE, 1897.

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THE PREVIOUS BULLETINS OF THIS SERIES ARE :

VOLUME I.

No. 1.—Preliminary report of the Morgan Expedition, 1870-71.—Report of a reconnoissance of the Lower Tapajos. C. F. HARTT. (*Out of print.*)

No. 2.—On the carboniferous Brachiopoda of Itaitúba, Rio Tapajos, Prov. Pará, Brazil. 1874. O. A. DERBY. (*Out of print.*)

VOLUME II.

The Cayuga Flora. Part I: A Catalogue of the Phaenogamia growing without cultivation in the Cayuga Lake Basin. 1886. By WILLIAM R. DUDLEY.

SOME FUNGI FROM ALABAMA.

COLLECTED CHIEFLY DURING THE YEARS 1889-92.

During the connection of the writer with the Alabama Polytechnic Institute and Agricultural and Mechanical College, at Auburn, some attention was given to the collection and study of the fungi of the State. The majority of the collections were made at Auburn, and while no special explorations were made to other parts of the State collections were made at several places when it was found necessary to visit certain points in connection with the special investigations of the diseases of the cotton plant. Since severing my relations with the Institution it has been my intention to publish a report on the collection in the form of a list of the well known forms with notes on the little known species and descriptions of those which seemed to be undescribed. The work has been delayed for several years because of the difficulty of finding sufficient time for critical study of the material while busied with other work. The number of species here reported must represent but a small number of the species of the State, and yet considering the limited time at my disposal for the work of collections the number is quite large, and the greater majority of these were collected during one year. During the year 1891-92 Mr. B. M. Duggar who was then tutor in my department collected many specimens, and others were collected by Mr. C. L. Newman and others. In all cases where no name of collector is given after a specimen it will be understood that the specimen was collected by myself. Credit is given to the other collectors by placing their name in parenthesis following date and habitat of the specimen.

From time to time short papers have appeared in the *Botanical Gazette*, *Bulletin of the Torrey Botanical Club*, and the *Journal of the Elisha Mitchell Scientific Society*, describing species and genera which had been examined critically at the time; while more extended accounts of the life history of a few of the more important of the parasitic forms especially those affecting the cotton plant were published in several of the *Bulletins* from the Alabama Experiment Station, in the *Journal of Mycology* and in *Bulletin 33* of the United States Department of Agriculture, Office of the Experiment Stations.

The list of these papers is as follows.—

- Some Erysipheae from Carolina and Alabama. Jour. Elisha Mitchell Sci. Soc. VII, 1-14, 1891.
- A new Ramularia on Cotton. Bot. Gaz. XV, 166-168, 1890.
- A new Ravenelia from Alabama. Bot. Gaz. XVI, 313-314, 1891.
- On the structure and dimorphism of *Hypocrea tuberiformis*. Bot. Gaz. XVI, 281-284, 1891.
- Fig Rust. Agric. Jour. Montgomery, Apr. 1891.
- Black Rust of Cotton; a preliminary note. Bot. Gaz. XVI, 61-65, 1891.
- Black Rust of Cotton. Bull. 27, Ala. Agr. Exp. Sta. and Mech. Coll. May, 1891.
- Anthracnose of Cotton. Jour. Mycol. VI, 173-178, 1890-91.
- Sphaerella gossypina*; the perfect stage of *Cercospora gossypina* Cke. Bull. Torr. Bot. Club. XVIII, 300-301, 1891.
- Some Leaf Blights of Cotton. Bull. 36, Ala. Agr. Exp. Sta. Agr. and Mech. College, March, 1892.
- Some Diseases of Cotton. Bull. Ala. Agr. Exp. Sta. Agr. and Mech. College. Dec. 1892.
- The Genus *Frankia* in the United States. Bull. Torr. Bot. Club. XIX, 171-177, 1892.
- Some *Cercosporae* from Alabama. Jour. Elisha Mitchell Sci. Soc. VIII, 1-35, 1892.
- Additions to the Erysipheae of Alabama. Idem, X, 74-76, 1893.
- Some *Septoriae* from Alabama. Idem, 76-78, 1893.
- Germination of the Spores of *Cerebella paspali*. Bull. Torr. Bot. Club. XXI, 127-128, 1894.
- Steps toward a Revision of the *Uromyces* species of North American graminicolous *Hymenogasteraceae*. Bull. Torr. Bot. Club, XXI, 222-225, 1894.
- Notes on some *Uromyces* of the United States. Bull. Torr. Bot. Club. XXI, 372-380, 1894.
- Leaf Curl and Plum Pockets; contribution to the *Uromyces* of the United States. Bull. 73, Cornell University Agr. Exp. Sta. Sept. 1894.
- Diseases of Cotton. Bull. 33, U. S. Dept. Agr. Office of Exp. Sta. 278-316, 1896.

In the determination of some of the species I wish to acknowledge my indebtedness to Mr. Duggar, now Assistant botanist of the Cornell Univ. Agr. Exp. Sta., to Mr. George Massee of the Kew Herbarium who kindly examined some specimens and compared them with Berkeley's types; to Dr. P. A. Saccardo of Italy and Dr. G. Lindau of Berlin for kind advice on some points; to Dr. P. Dietel of Reichenbach for determining a large number of the *Uredineae* and for furnishing descriptions

of the new species in this group. In the determinations of the Basidiomycetes Mr. A. P. Morgan of Preston, Ohio has from time to time given great aid as well as Dr. Chas. Peck of Albany, N. Y., and Mr. J. B. Ellis of Newfield, N. J., to all of whom I wish to express my sincere gratitude.

The number of genera and species are distributed in the different groups as follows.

	<i>Genera.</i>	<i>Species.</i>
Perisporiaceae	8	29
Sphaeriaceae	26	44
Hypocreaceae	4	4
Dothidiaceae	4	9
Hysteriaceae	3	3
Discomycetes	8	15
Phycomycetes	8	25
Ustilagineae	5	9
Uredineae	14	76
Gastromycetes	11	29
Tremellineae	3	4
Dacryomycetaceae	2	3
Agaricaceae	22	69
Polyporaceae	8	35
Hydnaceae	1	4
Thelephoraceae	4	11
Clavariaceae	1	1
Sphaeroideae	14	59
Excipulaceae	3	3
Leptostromaceae	6	10
Melanconieae	8	27
Mucedineae	10	16
Dematieae	21	129
Tubercularieae	6	16
Uncertain	1	2
Total	201	644

Of these, 3 genera and 61 species are described in this bulletin as new ; the Uredineae, 6 species in number, being credited to Dr. Dietel.

A few of the species which were collected have been lost and some therefore are not here reported, but of those which are still accessible a first duplicate series is deposited in the herbarium of Cornell University.

GEO. F. ATKINSON.

PERISPORIACEAE.

- Dimerosporium erysipheoides* E. & E. Forming brownish indefinite spots on leaves of *Panicum anceps*. 2057, Auburn, Aug. 24, 1891.
- Dimerosporium orbiculare* B. & C. Forming indefinite, obicular, blackish patches on the leaves of *Ilex opaca*, which are often confluent covering large areas on the upper side of the leaves. Auburn, Dec. 20, 1891.
- Meliola bidentata* Cke. Occurring in small irregularly orbicular patches on the upper side of the leaves of *Bignonia capreolata*, or the patches are confluent covering large areas. 2131, Auburn, Sept. 5, 1891, (Duggar.)
- Meliola tenuis* B. & C. Forming small orbicular pale spots on leaves of *Arundinaria tecta*. The spots are usually covered on the upper side by the black mycelium. 2257, Auburn, Oct. and Nov., 1891.
- Meliola nidulans* (Schwein.) Cke. Forming black orbicular velvety cushions on stems of a species of *Cornus*. The perithecia are immature, but as far as can be ascertained it seems to be this species. 2333, Auburn, Nov. 8, 1891.
- Meliola manca* E. & M. Forming indefinite black patches on leaves of *Rubus villosus*. 2303, Auburn, Oct. 1891. On the same leaves occur *Tripasporium elegans* Corda, and *Spiegazzinia tricophila* Atkinson.
- Sphaerotheca castagnei* Lev. On leaves of *Bidens*, Oct. 1889; Nov. 1891 (Duggar); on stems and leaves of *Erechtites hieracifolia*, Nov. 5, 1891.
- Sphaerotheca lanestris* Hark. The conidial stage only was found. The leaves of the host are badly deformed and covered with a thick coating of the mycelium. Leaves of *Quercus alba*. 2083, Auburn, Aug. 21, 1891. Also Dec. of the same year.
- Sphaerotheca humuli* (DC.) Burrill. Probably this species. See note in Jour. Elisha Mitchell Sci. Soc. VII, 64, 1890.
- Erysiphe communis* (Wallr.) Fr. On leaves of *Oenothera sinuata*, Auburn, June 3, 1890. Also on Champion of England peas cultivated in garden in same year.
- Erysiphe cichoracearum* DC. On *Ambrosia trifida*, Uniontown; *Ambrosia artemisiacifolia*, *Aster diffusus*, *A. tradescantia*, *Helianthus annuus*, *Mikania scandens*, *Solanum carolinense*, *Xanthium strumarium*. Auburn. Duggar and Atkinson.
- Erysiphe galeopsidis* DC. On leaves of *Verbena urticifolia*, Auburn, Oct. 28, 1891 (Duggar.)

- Erysiphe liriodendri* Schwein. On leaves of *Liriodendron tulipifera*, Auburn, Oct. 28, 1891 (Duggar.)
- Uncinula necator* (Schwein.) Burr. On cultivated grape, Auburn, 1889.
- Uncinula macrospora* Peck. On leaves of *Ulmus*, Auburn, Aug. 6, 1890.
- Uncinula flexuosa* Peck. On leaves of *Aesculus*, Wright's Mill, Lee County, July and August, 1890.
- Uncinula parvula* C. & P. On shrubs of *Celtis occidentalis*. Wright's Mill, autumn, 1889.
- Phyllactinia suffulta* (Reb.) Sacc. Common on leaves of *Ulmus*, Auburn, autumn, 1889; *Quercus nigra*, Feb. 1890; *Q. phellos* and *aquatica*, Dec. 1890. On leaves of *Cornus florida*, Nov. 3, and *Cornus* species undet'd, Oct. 18, 1891.
- Podosphaera biuncinata* C. & P. On leaves of *Hamamelis virginiana*, Oct. 28, 1891 (Duggar.)
- Podosphaera oxyacanthae* (DC.) D By. On leaves of *Prunus americana*, Auburn, Oct. 31, 1891 (Duggar); *Crataegus* species undet'd, Nov. 9 (Benton.)
- Microsphaera semitosta* B. & C. On leaves of *Cephalanthus occidentalis*, Auburn, autumn, 1889; what appears to be the same species was collected on leaves of *Tecoma radicans* at Auburn, Oct. 19, 1891. In mature specimens the appendages are quite characteristic. The specimens occurred in the vicinity of shrubs of *Cephalanthus*.
- Microsphaera euphorbiae* B. & C. On leaves of *Euphorbia preslii*, Auburn, Oct. 21, 1891 (Duggar.) Also on other species of *Euphorbia*. It is quite common all through the year, even maturing its fruit in January.
- Microsphaera ravenelii* Berk. On leaves of *Gleditschia tricanthos*, Auburn, Oct. 13, 1891.
- Microsphaera diffusa* C. & P. On *Desmodium* species; and leaves of *Lespedeza striata*, Auburn, autumn, 1889.
- Microsphaera grossulariae* (Wallr.) Lev. On leaves of *Sambucus canadensis*, Auburn, Oct. 13, 1891.
- Microsphaera alni* (DC.) Winter. On leaves of *Syringa*, Union Springs (J. L. Moulton.)
- Microsphaera quercina* (Schwein.) Burrill. On leaves of *Quercus nigra*, stellata, rubra, and other species. Auburn.
- Microsphaera calocladophora* Atkinson. On leaves of *Quercus aquatica*, Auburn, 1894, Dec. 1890. Very easily separated from the *M. quercina* of oak by the character of the appendages.
- Microsphaera vaccinii* C. & P. On *Vaccinium* sp. Auburn, Oct. 18, 1891 (Duggar.)

SPHAERIACEAE.

- Carlia bidwellii* (Ellis) Magnus. Pycnidia (*Phyllosticta labruscae*) on leaves of *Ampelopsis quinquefolia*, Auburn, May 13, 1890. Stems and leaves of cultivated grape also.
- Chaetomium pusillum* E. & E. On old paper in culture vessels in the laboratory.
- Chaetomium olivaceum* C. & E. On dead stems of *Gossypium herbaceum*. 2196, Auburn, Oct. 7, 1891.
- Chaetosphaeria brevispinosa* Atkinson, n. sp. On leaf sheaths of *Arundinaria tecta* which were probably inhabited by an insect larva. Mycelium forming an extensive, thin, crustaceous, dark brown layer of brown septate non setose hyphae. Perithecia numerous, scattered or crowded, crustaceous, black, ovate or pyriform, 100–120 μ in diameter. Base and middle portion covered with setae, apex smooth. Setae short, septate, black, 20–35 $\times$ 5–7. Asci small, clavate, 25–35, sp. part, 20–25 $\times$ 10–15. Spores crowded, inequilateral, elliptical or clavate, 3-septate, constricted, 10–14 $\times$ 3–4. Auburn, 2171.
- Daldinia concentrica* (Bolt.) Ces. et DeNot. On dead trunk of deciduous tree. 1714, Prague Junction, July, 1890.
- Diatrype stigma* (Hoffm.) Fr. On dead oak limb. 1879, Auburn, Feb. 22, 1891.
- Didymosphaeria eumorpha* (B. & C.) Atkinson. Perithecia immersed, usually two to four in a row, elevating the epidermis, membranaceous, minutely papillate, wall of perithecium composed of elongated cells in radiating lines from base to apex. Paraphyses not branched. Asci cylindrical, stipitate, 86–120; sp. pr. 70–90 $\times$ 5–6. Spores 8, uniseriate, end to end, brown, 1-septate, lightly constricted, oblong to elliptical, 10–14 $\times$ 3–3.5. Differs from *D. donacina* (Niessl.) Sacc. On stems of *Arundinaria tecta*. 2164, Auburn, Sept. 19, 1891 (Duggar). This agrees exactly with Berkeley's description of *Sphaeria eumorpha* (Grev. IV, p. 145) which Cooke placed in *Sphaerella* (Jour. Bot. 1883), and Saccardo placed in *Didymella* (Syll. 1, 560). Berkeley's description is very brief and does not give the color of the spores. At my request Mr. Massee kindly examined Berkeley's type in the Kew Herbarium and writes me that the spores are brown. This would place the species in the genus *Didymosphaeria* rather than in *Didymella*.
- Heptameria mesocdema* (B. & C.) Sacc. On stems of *Eupatorium*. 2125, Auburn, Sept. 17, 1891 (Duggar.)
- Hypoxyton perforatum* (Schwein.) Fr. On canes of *Arundinaria tecta*. 2165, Auburn, Aug. 23, 1891 (Duggar.)

- Hypoxylon annulatum* (Schwein.) Mont. On dead oak limb. 1354, Auburn, Aug. 1890.
- Hypoxylon purpureum* Nits. On dead branches. Gallion, Aug. 14, 1894 (Duggar).
- Hypoxylon fuscum* (Pers.) Fr. On dead oak limb. 1035, Auburn, autumn, 1889.
- Lentomita longirostrata* Atkinson, n. sp. Perithecia immersed, long ostiolum only erumpent, epidermis not elevated, membranaceous, 300-350, neck as long or longer. Asci fusoid-cylindrical, delicate but a little thickened at the apex, stipitate, the stipe deciduous, 30-40 x 7-9. Paraphyses long filiform, granular. Spores 8, biseriate, oblong-fusoid, 1-septate in middle, not constricted, 12-14 x 3. On stems of *Ambrosia artemisiaefolia*, Auburn, Oct. 1, 1891 (Duggar). Differs from *L. longicollis* Karst. On same stems with *Ophiobolus*, etc.
- Leptosphaeria michotii* (West.) Sacc. A few perithecia on leaves of *Elymus* sp. Associated with or on same leaves with *L. elymi*. 1175d, Auburn, July 5, 1890.
- Leptosphaeria elymi* Atkinson, n. sp. Perithecia loosely aggregated or scattered, few, covered, flattened, very short ostiolum erumpent, minute, 70-100. Asci cylindrical-oblong, short stipitate, 35-50 x 10-14. Spores crowded, bi-tri-seriate, honey yellow, fusoid-inequilateral, 5-septate, 18-24 x 3-3.5. Paraphyses filiform. On dead portions of leaves of *Elymus*, 1175a, Auburn, July, 5, 1890.
- Leptosphaeria planiuscula* (Riess.) Ces. et DeNot. On dead stems of some herbaceous plant, probably of the Compositae. 1920, Auburn, May 15, 1891.
- Leptosphaeria pomona* Sacc. On leaves of *Pirus malus*, Gold Hill, 1830, Sept. 1890. With 1820 (*Phyllosticta pirina*.)
- Lophiostoma niessleanum* Sacc. On dead stems of *Ambrosia artemisiaefolia*, Auburn, Oct. 1, 1891 (Duggar.)
- Massarina chrysopogonis* Atkinson, n. sp. Perithecia immersed, veiled by the epidermis which is elevated, membranaceous. Asci clavate, short pedicellate, 75-90 x 12-14. Paraphyses filiform. Spores subdistichous, hyaline, oblong-elliptical, 4-5 septate, involved in an abundant mucous layer which is broadly elliptical, the diameter of which is equal to or greater than that of the spore, sometimes rather indistinct. Spores 20-25 x 5-6. On dead stems of *Chrysopogon nutans*. Auburn, Nov. 1, 1891.
- Melanconis hicoloriae* Atkinson, n. sp. Stroma small, perithecia monostichous, necks converging to the small dark disc. Asci cylindrical-elliptical, 70-90 x 10-12, paraphysate. Spores biseriate, oblong-cylindrical, 1-septate, not constricted. Sometimes one of the cells which may be a little narrower, indistinctly septate or plasma

- divided, $15-20 \times 4-5$. Each end of the spore with a short straight apiculus 2×0.5 . Near *M.alni* but spores and setae smaller. On branches of *Hicoria alba*, Auburn, Jan. 1891.
- Metasphaeria infuscans*** L. & E. On dead stems of *Andropogon virginicus*. 2101, Auburn, Sept. 12, 1891 (Duggar.)
- Metasphaeria graminum*** Sacc. On dead leaves of *Chrysopogon nutans*. 2099, Auburn, Sept. 12, 1891 (Duggar.)
- Metasphaeria ambrosiaeicola*** Atkinson, n. sp. Perithecia gregarious or scattered, immersed, erumpent, depressed, at length cupulate, papillate, black, $250-300$. Asci cylindrical-clavate, $40-60 \times 10-12$. Paraphyses filiform. Spores hyaline, fusoid-cylindrical, with rounded ends, straight or a little curved, faintly 1-3 septate, little constricted, $20-35 \times 3-4$, oblong, uniseriate or biseriate. On dead stems of *Ambrosia artemisiaefolia*. Auburn, Oct. 1, 1891 (Duggar.)
- Montagnella heliopsidis*** (Schwein.) Sacc. Forming black extensive cushions on leaves and stems of *Heliopsis* sp. Auburn, summer and autumn.
- Nummularia nummularia*** (Bull.) On dead branches and trunks of deciduous trees. Auburn, 1890.
- Ophiobolus anguillides*** (Cke.) Sacc. On dead stems of *Ambrosia artemisiaefolia*. 2412, Auburn, May, 1892.
- Ophiobolus porphyrogonus*** (Tode) Sacc. On cut end of stem of *Gossypium herbaceum*. 2217, Auburn, Oct. 10, 1891.
- Ophiobolus glomus*** (B. & C.) Sacc. Perithecia scattered or gregarious, small, $200-300$, erumpent, convex, shortly papillate. Asci fusoid, $50-70 \times 12-15$; paraphyses filiform. Spores straight or curved, cylindrical, hyaline, faintly septate, cells all alike, $25-60 \times 3-4$. On stems of *Ambrosia artemisiaefolia*. 2433, Auburn, May, 1892. Differs from *Ophiobolus anguillides*, though found on the same stems; on the same stems were found also *Metasphaeria leiostega* and *Lophiostoma niessleanum*. The original description was very imperfect.
- Parodiella grammodes*** (Kze.) Cke. On leaves of *Desmodium paniculatum*, Auburn, common. Usually known as *P. perisporioides*.
- Physalospora ilicis*** (Schleich.) Sacc. On leaves of *Ilex opaca*, with *Dimerosporium orbiculare*. Auburn, autumn, 1891.
- Physalospora carpogena*** Atkinson, n. sp. Perithecia black, erumpent, of coarse texture, not papillate, $80-100$. Asci clavate to cylindrical, $40-50 \times 10-12$; paraphysate. Spores biseriate, clavate to broadly fusoid, inequilateral, hyaline, $12-14 \times 3.5-4$. Sometimes associated with a *Discosia*, probably *D. artocreas*. On seeds of *Rubus villosus*. 2369, Auburn, Dec. 3, 1891 (Duggar).

- Pleospora americana* E. & E. 1191, on leaves of *Dolichos sinensis*, Auburn, June 30, 1890; 1901, stems of *Viola tricolor*, Feb. 23, 1891.
- Pleospora nigricantia* Atkinson, n. sp. Perithecia minute, 120-150. Asci ovate-obovate, 70-90 x 35-45. Spores crowded, elliptical to oblong, rounded at the ends, 5-septate, four middle cells longitudinally divided, not or slightly constricted, brown, 35-40 x 16-18. On fallen leaves of *Gossypium herbaceum*, which were attacked by *Macrosporium nigricantium*, 1802.
- Flowrightia morbosa* (Schwein.) Sacc. 2133, on branches of *Prunus umbellata*, Auburn; 2256, on branches of *Prunus americana*, Pike Roads.
- Rosellina aquila* (Fr.) DeNot. On dead branches of deciduous trees. Auburn, 1880, Feb. 22, 1891.
- Scirrhia sporoboli* Atkinson, n. sp. Stroma 1-3 mm long x 200-500 wide, narrow, black, whitish within, eruptent. Perithecia (locules) small, 120-150, with a short prominent rostrum. Asci clavate, tapering below into a slender pedicel, 50-70 x 8-9; paraphyses filiform. Spores biserial, fusoid, inequilateral, 1-septate, hyaline, granular, 12-16 x 3-4. Differs from *S. rimosa* in prominent perithecia and in size and shape of spores and asci. 2040, Auburn, on stems of *Sporobolus asper*. (Duggar and Newman.)
- Sphaerella colorata* Pk. On leaves of *Kalmia*, 2374, Auburn, 1890.
- Sphaerella arundinariae* Atkinson, n. sp. Spots large irregular. Perithecia seated on a branching brown, stout mycelium on the outer surface of the leaf, minute but prominent, rotund, membranaceous, not papillate, 60-80. Asci ovate, 30-40 x 12-14, not paraphysate. Spores crowded, lanceolate or ovate, 1-septate, 11-13 x 3-4. On leaves of *Arundinaria tecta*, Auburn.
- Sphaerella leptopleura* DeNot. Perithecia underneath the epidermis, membranaceous, depressed, ostium prominent, not papillate, 150-200. Asci numerous, clavate-cylindrical, 35-50 x 7-9. Spores oblong, curved or straight, 10-14 x 2.5-3, faintly septate in the middle. On rotting leaves of *Secale cereale*. 1907, Auburn.
- Sphaerella baptisiicola* (Cke.) E. & E. Few perithecia on dead portions of leaves of *Elymus*, with *Leptosphaeria elymi*. 1775f, Auburn, July 5, 1890.
- Sphaerella gossypina* Atkinson. On leaves of *Gossypium herbaceum*, following *Cercospora gossypina*, of which it is probably the perithecial stage. 2134, Alberta, Station; Auburn, 1890.
- Urosporella*, Atkinson, new genus. Characters of *Urospora* but spores with a long slender cilium-like, flexuous flagellum at each end, instead of a firm and rather stout appendage as in *Urospora*.

Urosporella americana Atkinson, n. sp. Perithecia immersed, black, prominent, strongly elevating the epidermis, globose, usually with a very short minute papillate ostiolum, apex of perithecium erumpent, 250-300. No paraphyses. Asci cylindrical, stipitate, 70-80 x 7-9. Spores 8, elliptical, inequilateral, hyaline, with a very slender hyaline flexuous cilium or flagellum at each end, 10-12 x 5-7 without the cilia, cilia 7-10 x 0.5. On dead stems of an herb. 1770, Auburn, July, 1890.

Xylaria polymorpha (Pers.) Grev. On trunk of dead Magnolia, 1287, Shorters, July 16, 1890.

Xylaria hypoxylon (Linn.) Grev. On old stump, Auburn, March, 1891.

HYPOCREACEAE.

Echinodothis tuberiformis (B. & R.) Atkinson. Bull. Torr. Bot. Club. XXI, 224, 1894.

Hypocrea tuberiformis B. & R. Grev. IV, 13.

Hypocrella tuberiformis Atkinson, Bot. Gaz. XVI, 282, 1891.

Not Dussella tuberiformis Patouillard, Bull. Soc. Mycol. France, VI, 107, 1890. On canes of *Arundinaria tecta*, Auburn, Aug. Oct. 1891.

Eleutheromyces subulatus (Tode) Fuckel. On decaying Agaric, Auburn.

Hypomyces lactifluorum (Schwein.) Tul. On *Lactarius* sp. Auburn, 1897, Aug. 1890.

Nectria episphaeria (Tode) Fr. On *Diatrype stigma*. 1878, Auburn, Feb. 22, 1891.

DOTHIDEACEAE.

Dothichloe hypoxylon (Pk.) Atkinson. Bull. Torr. Bot. Club. XXI, 223, 1894.

Epichloe hypoxylon Pk. 27th Rep. N. Y. State Mus., 108.

Hypocrea atramentosa B. & C. Jour. Linn. Soc. X, 377.

Dothidea atramentaria B. & C. Grev. IV, 105 (where it is placed as a form of *D. vorax* B. & C.)

Hypocrella hypoxylon Sacc. Syll. V, 581.

Ophiodothis hypoxylon Sacc. 1897.

On stems and leaves of grasses; 2094, 1169, 1897, etc., on *Andropogon virginicus*, Aug. 30, 1891; 2118, *Eragrostis tenuis*, Auburn, Sept. '91; 2144a *Eragrostis campestris*, Sept. '91. Material of this species was sent to Mr. Geo. Massee who kindly compared it with Berkeley's types, and says that it is identical with *Epichloe atramentaria* B. & C. and also with Peck's *E. hypoxylon*. He thinks however that it is distinct from Berkeley's *D. vorax* and *pillulaeformis*. These I have not had an opportunity to see. It is certainly dothideaceous, and if no account

were taken of the difference between species in which the spores remain intact, and those which fall into short segments at maturity, it would go into Saccardo's genus *Ophiodothis*. *Ophiodothis* however was characterized as possessing continuous spores. There are some species in the genus in which the spores remain intact. I would separate the scolecosporous species of the Dothideaceae, as thus far known, into two genera on the character of the spores, one with permanent linear spores, and the other with spores which separate into segments at maturity. To *Ophiodothis* belong those in which the spore remains intact, while to *Dothichloe* I would remove those species in which the spores separate into segments at maturity. This distinction is equal to that which obtains in the case of *Ohleria*, as compared with related genera, where in the former the spores at maturity are divided into two parts, making apparently double the number in an ascus. *Ophiodothis tarda* Harkness, New Calif. Fungi, 26; Sacc. Syll. Fung. IX, 1051, has spores either guttulate or septate, and at maturity they do not separate into segments, as I have seen from specimens kindly sent me by Dr. Harkness. This I would take as the type of *Ophiodothis*.

Dothichloe aristidae Atkinson. Bull. Torr. Bot. Club. XXI, 224, 1894. Forming black roughened stromata which entirely encircle the stems of *Aristida purpurascens*, var. *minor*. 2145, Auburn, Sept. 12, 2252, Oct. 3, 1891 (Duggar and Atkinson).

Myriogenospora paspali Atkinson. Bull. Torr. Bot. Club. XXI, 225, 1894. On leaves of *Paspalum laeve*, Auburn.

Botryosphaeria berengeriana DeNot. On dead capsules of *Gossypium herbaceum*. 2354, Auburn, autumn, 1890. (Determined by Dr. Massee).

Phyllachora graminis (Pers.) Fuckel. On leaves of various grasses; 1961, *Panicum*; 1994, *Paspalum laeve*; 2173 *Eragrostis tenuis*; 2175 *Muhlenbergia diffusa*; 2112 *Paspalum setaceum*; 1551 *Sorghum halapense*; 2049 *Panicum agrostoides*, Auburn (Duggar, Newman, Atkinson).

Phyllachora cynodontis Niess. On leaves of *Andropodon* sp. 1301 Shorters; *Sporobolus indicus*, 1238, Auburn, July 25, 1890. Stroma usually smaller than in *P. graminis*, and spores larger, and acutely elliptical.

Phyllachora cornuospora Atkinson, n. sp. Stroma similar to that of *P. graminis*. Asci cylindrical to clavate, 50-70 x 10-15. Spores uniseriate or biseriate, long ovate with a straight or curved process or appendage at the broader end, 14-17 x 5-7. On leaves of *Panicum agrostoides*. 2049, Auburn, Aug. 27, 1891.

Phyllachora ambrosiae (B. & C.) Sacc. Stromata scattered or crowded, small, black, convex, extending entirely through the leaf and showing the convexity on both sides of the leaf. Asci-

gerous cells 1-3 in a stroma. Asci cylindrical, 70-80 x 9-12, short pedicellate. Spores uniseriate, rarely subbiserial, hyaline, elliptical or nearly sphaeroid, broadly rounded ends, 9-12 x 6-7, granular. On leaves of *Ambrosia artimesiaefolia*, Auburn, 1890.

Dothidea ambrosiae Schwein., was described earlier than *D. ambrosiae* B. & C., and Saccardo placed both in *Phyllachora*. Ellis (N. A. P. 598) says that *Dothidea ambrosiae* is not a *Phyllachora*. Were it a *Phyllachora* then *D. ambrosiae* B. & C. would require a new name. Although Saccardo placed both in the genus *Phyllachora*, if Schweinitz' species is not a member of this genus it would not seem necessary to give a new name to Berkeley's species since Saccardo wrote *Phyllachora ambrosiae* (B. & C.) on an earlier page of his *Sylloge* (601) than *P. ambrosiae* (Schwein.), the latter being on page 620.

Phyllachora lespedezae (Schwein.) Sacc. On leaves of *Lespedeza* sp. 1816, Auburn, Oct. 21, 1890.

HYSTERIACEAE.

Hysterium erianthicola Atkinson, n. sp. Perithecia black, carbonaceous, short oblong, cleft very narrow, 2-3 mm long by 1½ mm broad; Asci clavate, 90-120 x 10-12; paraphysate. Spores 2-3 seriate, 8-9 septate, yellowish, cylindrical, curved, fourth cell from the end broader than the others, 30-35 x 3-4.2257, on *Erianthus* sp., Auburn, Sept. 26, 1891.

Lophidium anomalum Atkinson, n. sp. Perithecia erumpent, black, carbonaceous, elongate, resembling those of the *Hysteriaceae*, 400-700 x 200-300, ostiolum inconspicuous, sometimes one central one compressed, sometimes little raised above the convex surface of perithecium and not compressed, sometimes several ostiola lateral and in such cases there are several groups of asci each group corresponding to a single ostiolum. Asci long cylindrical, stipitate, 170-200 paraphyses filiform. Spores 8 usually uniseriate, sometimes subbiserial, 4-6 septate, little constricted at middle, straight, very rarely little curved, 1-3 of the middle septa longitudinally septate, 22-28 x 7-9. On culms of *Erianthus*, associated with *Hendersonia erianthi*. Differs from *Lophidium hygrophilum* Sacc., which is associated with *Hendersonia donacis*. Auburn, 2345a, Nov. 12, 1891 (Duggar).

Rhytidhysterium scortichinii Sacc. and Berl. On *Maclura aurantiaca*, Gallion, Aug. 14, 1894 (Duggar).

DISCOMYCETES.

- Exoascus australis** Atkinson. Deforming leaves of *Carpinus americanus*. Auburn, 2401, Apr. 30, 1892.
- Exoascus deformans** (Berk.) Fuckel. Deforming the leaves, rarely the shoots of *Prunus persica*. Auburn.
- Exoascus farlowii** Sadebeck. Deforming the fruits of *Prunus serotina*. A form occurring on the leaves of the same trees and called by myself *E. varius* (Bull. Torr. Bot. Club. XXI, 1,378, 1894) is considered by Giesenhagen (Flora, 1895) as identical with *E. farlowii*. Auburn.
- Exoascus mirabilis** Atkinson. Deforming the buds, more rarely the fruits of *Prunus angustifolia*. Auburn.
- Exoascus rhizipes** Atkinson. Deforming the buds and fruits of *Prunus triflora*. Auburn.
- Taphrina caerulescens** (D. & M.) Tul. On various species of *Quercus* and showing considerable variation in the size of the asci and the size of the spores, as well as the size of the affected areas on the different hosts. Whether these represent different species must be determined by farther investigation. Material was collected on the following species of *Quercus*. *Q. nigra*, *phellos*, *aquatica*, *falcata obtusiloba*, *cinerea*. Auburn.
- Belonium eustegiaeforme** (B. & C.) Sacc. Ascoma first appearing as numerous black points under the epidermis, then erumpent, cupulate, sessile, dark brown, 200-300, disk pale in drying, margin collapsing in various positions partly or entirely covering the disk. Asci cylindrical*clavate, 80-100 x 12-14; paraphyses filiform. Spores biseriate, long clavate or fusoid, hyaline, continuous then 3-septate, straight or inequilateral, 20-30 x 5-7. On dead canes of *Arundinaria tecta*, Shorters, 1300, July 16, 1890. Agrees with specimens in Rav. F. A. E. 310, *Peziza eustegiaeforme* B. & C. N. A. F. 741; *P. arundinariae* Cke., *Dysc. U. S.* p. 297. Placed by Saccardo doubtfully in *Belonium*, and a full description is given above from the Alabama material because of the meager original description. It is a good *Belonium*.
- Pezizella translucens** (Gill.) Sacc. Cups straw color, sessile, thin, concave, then expanded, margin undulate, 2-4 mm in diameter. On decaying wood, 1285, Shorters, July 16, 1890.
- Pyrenopeziza atrata** (Pers.) Fuckel. On dead stems of *Ambrosia artemisiaefolia*. Auburn, 2367, winter, 1891.
- Rhytisma acerinum** (Pers.) Fr. Forming yellowish irregular spots with black cushions on the upper side of leaves of *Acer rubrum*. *Discosia artocreas* is frequently associated with it. Auburn, 2000. July 22, 1891. (Duggar and Newman).

- Rhytisma vaccinii* (Schwein.) Fr. On living leaves of *Vaccinium arboreum*. Agrees with *R. acerinum* Schwein., in Ellis N. A. F. 899, but the stromata are epiphyllous on amphigenous spots. 2205, Auburn.
- Rhytisma curtisii* B. & R. On leaves of *Ilex opaca*. 2136, Auburn, Sept. 13, 1891.
- Rhytisma solidaginis*. Various species of *Solidago*. Auburn.
- Scleroderris arundinariae* Atkinson, n. sp. Ascomata 0.5-1 mm in diameter flattened sessile, sometimes margin irregularly incurved, dark brown, disk pale. Asci cylindrical to clavate 100-120 x 12-14; paraphysate. Spores 8, biseriate, clavate-cylindrical or fusoid, hyaline, usually 3-4 septate, 35-40 x 3-4. On dead canes of *Arundinaria tecta*. 1311, Auburn, July 27, 1890.
- Xylogramma graminis* Atkinson, n. sp. Ascomata linear, dark brown, immersed, blackening the epidermis above which it splits above, the light colored disk just visible between the margins which are not elevated above the epidermis, 2-4 mm long. Asci oblong to cylindrical, short stipitate, 40-60 x 10-12; paraphysate. Spores 8 biseriate, oblong to clavate (one end narrowed), faintly 3-4-septate, hyaline, 12-15 x 2-3. On stems of *Chrysopogon nutans*. 2434, Auburn, Nov. 1, 1891 (Duggar). Differs from *X. holoschoeni* (DeNot.) Sacc.

PHYCOMYCETES.

- Empusa apiculata* Thaxter. On dipterous insect. 1784, Auburn, Jan. 1890.
- Saprolegnia monoica* Pringsh. On dead flies in water. Auburn.
- Saprolegnia declina* Humphrey. On dead flies in water. Auburn.
- Achlya americana* Humphrey. On dead flies in water. Auburn.
- Achlya apiculata* DeBy. On dead flies in water. Auburn.
- Achlya oblongata* var *globosa* Humphrey. On dead flies in water. Auburn.
- Cystopus bliti* (Biv.) DBy. On leaves of *Amarantus retroflexus*, and *A. spinosus*. Auburn, June 20, 1890.
- Cystopus tragopogonis* (Pers.) Schroeter. On leaves of *Ambrosia artemisiaefolia*. Pike Roads, 1890.
- Cystopus portulacae* (DC.) Lev. On leaves of *Portulaca*, Auburn, July 3, 1890.
- Cystopus ipomoeae-panduranae* (Schwein.) Farl. On leaves and stems of *Ipomoea*. On the stems large galls are frequently formed in which the oospores are developed abundantly. Also on leaves of *Ipomoea batatas*. Auburn.
- Cystopus candidus* (Pers.) Lev. On *Lepidium*; cultivated cress, etc. Auburn.

- Basidiophora entospora* R. et C. On leaves of a young plant of some species of *Aster* or *Erigeron*. 1094, 1058, Auburn, Feb. 1890.
- Bremia lactucae* Regel. On leaves of *Lactuca*. Auburn, spring, 1890.
- Peronospora parasitica* (Pers.) DBy. On leaves of several species of *Cruciferae* in late winter and early spring. Auburn.
- Peronospora lamii* (A. Braun) DBy. On leaves of *Lamium amplexicaule*. Oospores in dead portions of the leaves. Auburn, 1070, 1075, 1823 (with oospores), Jan. 1890-91.
- Peronospora violae* DBy. Petioles and leaves of *Viola tricolor* var *arvensis*. Auburn, 1900, Feb. 24, 1891.
- Peronospora trifoliorum* DBy. On leaves of *Trifolium carolinianum*. Auburn, 2377, Dec. 27, 1891; Jan. 24, 1892.
- Peronospora alsinearum* Casp. On leaves of *Cerastium*. Auburn, Feb. and Dec. 1890.
- Peronospora arthuri* Farl. On leaves of *Oenothera sinuata*. 1060, Auburn, Mar. 24, 1890.
- Peronospora alta* Fuckel. On leaves of *Plantago* sp. Auburn, 1068, Apr. 17, 1890.
- Peronospora calotheca* DBy. On leaves of *Houstonia patens*. 1065, 1067, Auburn, Mar. 23, and Apr. 15, 1890. Oospores abundant in some of the leaves and stems. Underwood (Bull. Torr. Bot. Club, XXIV, 83, 1897) has referred specimens collected on this host in Alabama to *P. seymourii* Burrill, though he did not see the oospores. In my specimens the wall of the oogonium is not brown, and the oospores as well as other parts agree well with De Bary's description and figures (Ann. d. Sci. Nat. Bot. Ser. 4, XX, 111. 1863).
- Plasmopara viticola* (B. & C.) Berl. et DeToni. On leaves, stems and fruit of cultivated *Vitis*. Auburn.
- Plasmopara geranii* (Pk.) DeToni. On leaves of *Geranium carolinianum*. Auburn, 1086, Dec.-Apr. 1870, oospores in petioles and laminae of leaves.
- Plasmopara halstedii* (Farl.) Berl. et. DeToni. Auburn, 1140, in leaves of *Gnaphalium purpureum*; 2031 in leaves of *Bidens*, Aug. 27, 1891.

USTILAGINEAE.

- Entyloma saniculae* Pk. Causing small orbicular or angular spots on leaves of *Sanicula* sp. Surface of the spots frosted with the numerous conidia; teleutospores in the tissues. Auburn, 2402, May 1 and 9, 1892.

- Cintractia sorghi* (Sorok.) DeToni. On *Sorghum vulgare* (kaffir corn). Uniontown, Oct. 2, 1892 (Duggar).
- Sorosporium everhartii* E. & G. In inflorescence of *Andropogon virginicus*, Auburn.
- Ustilago cesatii* Fisch. d. Wald. In ovaries of *Panicum sanguinale*. Auburn, autumn, 1889.
- Ustilago zeae* (Berkman) Arthur. In staminate and pistillate inflorescences and in the canes and leaves of *Zea mays*. Auburn (Duggar and Atkinson).
- Ustilago tritici* (Pers.) Jensen. In ovaries, etc., of *Triticum vulgare*. Auburn, May.
- Ustilago avenae* (Pers.) Jensen. In inflorescence of *Avena sativa*. Auburn, May.
- Ustilago utriculosa* (Nees) Tul. In ovaries of *Polygonum pennsylvanicum*. Auburn, 2121, Oct. 18, 1891 (Duggar); 1594, *P. hydropiper*, Prague Junction, Sept. 6, 1890.
- Tolyposporella* Atkinson, n. gen. Spore balls composed of numerous spores which are firmly agglutinated by their thick sac-like epispores. Promycelium branched, septate. Sporidia pleurogenous, single.
- Tolyposporella chrysopogonis* Atkinson n. sp. Spore balls forming powdery masses underneath the leaf sheaths on the culms of *Chrysopogon nutans*. Spore balls black, large, irregular, oval, spherical, oblong or elliptical, 50-175 x 40-80 μ . Spores firmly agglutinated in mass, irregularly globose or somewhat angular, epispore thick, sac-like, dark brown, 10-15 μ in diameter. Germinating by a delicate promycelium which becomes branched, septate. Sporidia pleurogenous, single, subclavate or fusoid, curved or inequilateral, proximal end sometimes somewhat sigmoid, 9-12 x 2-2.5 μ . Auburn, autumn. Collected several times by Mr. Duggar. Material for the germination of the spores was taken from the herbarium which was collected the previous autumn, and also from fresh material which I collected in March, 1892.

UREDINEAE.

- Chrysomyxa albida* Kühn. Teleutospores forming minute white points in yellowish areas of languid leaves of *Rubus villosus*. Shorters, 1290, July 16, 1890; Auburn, 1542, July 22, 1890; 2277, Oct. 26, 1891.
- Coleosporium vernoniae* B. & C. On leaves of *Vernonia altissima*. Auburn, 1266.
- Coleosporium sonchi-arvensis* (Pers.) Lev. On leaves of various *Compositae*; probably when the life history of the forms on differ-

ent hosts have been studied there will be found to be several species now accredited to a single one. Material was collected on the following species: *Aster diffusus*, *patens*, *dumosus*, *puniceus*, *undulatus*, *tradesanti*; *Solidago patula*, *canadensis*, *rugosa*; *Eupatorium purpureum* and *Liatris graminifolia*, *Elephantopus tomentosus*, *nudatus*, *carolinianus*. Duggar and Atkinson.

Coleosporium ipomoeae (Schwein.) Burrill. Auburn, 2059, *Ipomoea purpurea*, Aug. 17, 1891 (Duggar), 2152, Sept. 1891 (Newman), 2153, *Convolvulus sepium*, Sept. 8, 1891.

Gymnosporangium macropus Link. Roestelia in leaves and fruit of *Pyrus malus*, and *P. coronaria*; teleutospores on *Juniperus virginiana*. Teleutospores March and April, roestelia in July and August. Common in different parts of the State.

Gymnosporangium clavipes Cke. & Pk. Roestelia on leaves, branches and fruit of *Cydonia vulgaris*, *Cydonia japonica*, and various species of *Crataegus*. Common in various parts of the State.

Melampsora farinosa (Pers.) Schroeter. On leaves of *Salix nigra*. Auburn; common.

Melampsora populina (Jacq.) Lev. On leaves of *Populus grandidentata*, and *angulata*.

Phragmidium obtusum (Str.) Schum. & Kze. On leaves of *Fragaria indica*, uredo stage. Mobile, April, July, 1891. (Det. Dietel.)

Puccinia emaculata Schwein. On leaves of *Triodea cuprea*; Auburn, 2202, Oct. 7, 1891 (Atkinson); 2194, Sept. 30, 1891 (Newman); 2195, languishing leaves of *Panicum virgatum*; *Tricuspis sessleroides* 2122, Sept. 17, 1891 (Duggar). Also 1791 and 2224 on languishing leaves of *Panicum virgatum*; 2106 on dead leaves of *Panicum virgatum*, Sept. 14, 1891, (Det. Dietel).

Puccinia asteris Duby. On young leaves of a species of *Aster*. Auburn, 1080, teleutospores germinating Jan. and March, 1890; 2282, Oct. 22, 1891 (Duggar.)

Puccinia helianthi Schwein. On leaves of *Helianthus angustifolius*, Auburn, 2248, Oct. 15, 1891; *H. annuus*, 2021, Aug. 24, 1891; *H. tuberosus*, 2131, Sept. 10, 1891; also 1573, 2248a and 2189 (Det. Dietel). In some cases all three stages on the same plant.

Puccinia xanthii Schw. On leaves of *Xanthium strumarium*. Auburn, 1758, Aug. 1890.

Puccinia xanthii var. *ambrosiae* B. & R. On leaves of *Ambrosia trifida*, Pike Roads, 1938, July 9, 1891; Hope Hull, Aug. 1891 (Det. Dietel).

Puccinia violae (Schum.) DC. On leaves of *Viola cucullata*. Auburn, 1195, June 23, 1890; 1556, Jul. 22, '90; 2325 Nov. 9, '91.

Puccinia sorghi Schw. On leaves of *Zea mays*. Auburn, 2359, Aug. 1891 (Newman). Auburn, 1022, 1889; Mathews, 2253, Oct. 10, 1891.

- Puccinia heterospora* B. & C. On leaves of *Sida spinosa*.
- Puccinia rubigo-vera* (DC.) Wint. On leaves of *Hordeum vulgare*. Uniontown, 1271 (uredo stage) July 11, 1890 (Det. Dietel).
- Puccinia caricis* (Schum.) Reb. (?) On *Carex lurida*. Auburn, 2368, Aug. 29, 1891; 2329. The latter number was sent to Dr. Dietel who refers it doubtfully to this species with these remarks. "This determination is extremely doubtful since the gross appearance of the fungus on the host differs from that of *P. caricis*, but in the form of the spores I find no difference."
- Puccinia polysora* Underw. On *Tripsacum dactyloides*. Auburn, 2290, Oct. 28, 1891; 2221, Oct. 14, 1891 (Duggar).
- Puccinia fuirenae* Cke. Sori forming prominent small black dots on leaves, sheaths and stems of *Fuirena*. Auburn, 2297, Nov. 3, 1891 (Duggar).
- Puccinia nigrovelata* Ellis & Tracy. On *Cyperus retroflexus*, *Cyperus rotundus*, Auburn, 2167, Sept. 12, 1891 (Duggar. Det. Dietel); Shorters, 1306, July 16, 1890.
- Puccinia hieracii* (Schum.) Mart. On leaves, stems and bracts of *Pyrrihopappus carolinensis*. Auburn, May-July, 1890-91, Nos. 1158, 1575, 1959. Also on *Cirsium* sp. 2268, Oct. 28, 1891 (Det. Dietel).
- Puccinia silphii* Schw. On leaves and stems of *Silphium*. Auburn, 1548, July 1890-91 (Det. Dietel).
- Puccinia smilacis* Schw. On leaves of *Smilax Glauca*. Auburn, 1079, uredo and teleutospores, Feb. 16, 1891; also at Shorters on same host.
- Puccinia hydrocotyles* (Mont.) Cke. On leaves of *Hydrocotyle umbellata*. Auburn, Nov. 9, 1891.
- Puccinia menthae* Pers. VanDorn, on *Salvia azurea* var. *grandiflora*, Aug. 15, 1894 (Duggar). On leaves of *Pycnanthemum* sp. Highland Park, Montgomery, 2249, Oct. 1891.
- Puccinia pruni-spinosae* Pers. Auburn, 1109. On leaves of *Prunus persica* (uredospores); 1815 on leaves of *Prunus angustifolia*, Oct. 25, 1890; (Atkinson); 2203 on leaves of *Prunus serotina*, Oct. 3, 1891; 2287 *P. americana*, Oct. 29, 1891 (Duggar).
- Puccinia spagazzinii* DeToni. On leaves of *Mikania Scandens*. Auburn, Aug.-Sept.-Nov., 1891, (Duggar).
- Puccinia pekiana* Howe. On leaves of *Rubus trivialis*, Auburn, common. Accidial stage only.
- Puccinia argentata* (Schultz) Winter. On leaves of *Impatiens fulva*, 1176, Uredo sori numerous, teleutospores few, June 30, 1890 (accidia collected earlier), Parkinson's Mill near Auburn; 2250, Oct. 11, 1891.

- Puccinia graminis* Pers.? Auburn, 1099, uredo stage, on leaves of *Secale cereale*, Feb. 14, 1890.
- Puccinia coronata* Corda. On leaves of *Avena sativa*. Auburn, 1136, spring, 1890.
- Puccinia purpurea* Cke. Uniontown, Oct. 1892, on leaves of *Sorghum halapense* (Duggar det.)
- Puccinia seymeriae* Burr. On leaves of *Gerardia tenuifolia*. Uniontown, Sept. 4, 1894 (Duggar det.)
- Puccinia verbessinae* Schw. On leaves of *Verbesina siegesbeckia*. Mobile, 1277, July 14, 1890. Teleutospores frequently abnormal with 3-5 cells. (Det. Dietel).
- Puccinia angustata* Pk. On leaves of *Scirpus cyperinus* var. *erio-phorum*. Auburn, 2322, Nov. 8, 1891 (Det. Dietel).
- Puccinia atkinsoniana* Dietel n. sp. Sori on the under side of the leaves, a few also upon the upper side. Uredo-sori elliptical to linear, cinnamon-brown, surrounded by the ruptured epidermis. Uredospores elliptical, obovate or rarely spherical, $22-30 \times 17-22$, epispore spinulose, yellowish-brown, with 2 germ pores lying very near the apex. Teleutosori blackish-brown, arched in the form of a cushion, circular, elliptical or linear, firm. Teleutospores mostly clavate, at the septum generally somewhat deeply constricted, $40-60 \times 18-28$, upper cell spherical or oval, rounded at the apex, provided with a thick wall, at the apex 5-10 in diameter, lower cell generally cuneiform and narrowing into the pedicel or rounded at the base, epispore smooth, brown; pedicel 20-60 long, durable. In the specimens, 2067, are numerous one-celled teleutospores which are of the same length as the two-celled ones of the clavate form. On *Carex lurida*. Auburn, 2067, Aug. 29; 2240, Oct. 11, 1891; 2343 (Atkinson); 2174, Sept. 22, 1891 (Duggar).
- Puccinia minuta* Dietel n. sp. Sori on the under side of the leaves, punctiform, very small, the teleutospore-sori long covered by the strongly arched epidermis. Uredospores spherical about 30 in diameter or broadly elliptical, $28-34 \times 26-31$, dark brown, spinulose, three germ pores. Teleutospores oblong rounded at both ends or at the base tapering into the short thick pedicel, slightly constricted at the middle, epispore smooth, brown, at the apex about 7μ in diameter. On *Carex verrucosa*. Auburn, 2068, Aug. 29, 1891.
- Puccinia sanguinea* Dietel n. sp. Sori on purple-red spots scattered on the under side of the leaves, small or of medium size, covered by the strongly arched epidermis. Uredospores obovate or spherical, $28-38 \times 22-28$, intensely brown, spinulose. Teleutospores elliptical, rounded at both ends, at the septum somewhat constricted, $40-47 \times 27-33$, smooth, chestnut brown, with long pedicels. Distinct from *P. purpurea* Cke. On *Sorghum vulgare* (kaffir corn). Auburn 2392, Dec. 22, 1888.

- Puccinastrum crotonis* (Burr.) DeToni. Forming enlarged pustules partly or entirely surrounding the stems of *Croton*. Huntsville, Sept. 9, 1892.
- Ravenelia cassiaeicola* Atkinson. On leaves and stems of *Cassia nictitans*. Auburn, 1585, Sept. 4, 1890. Common, and collected at other times.
- Ravenelia glanduliformis* B. & C. Auburn. 2146, etc., *Tephrosia spicata*, Sept.-Oct., 1891; 2228, *Tephrosia virginiana*, Sept. 1891; 2020, etc., *Tephrosia hispida*, Sept.-Oct. 1891 (Duggar and Atkinson).
- Uromyces trifolii* (Hedw.) Lev. On leaves of *Trifolium hybridum*, *T. carolinianum*. Auburn.
- Uromyces eagrostridis* Tracy. On *Eragrostis tenuis*. Auburn, 2223, Oct. 11, 1891 (Duggar). Dr. Dietel sends the following note: "I find the spores in this specimen somewhat larger than the measurements given by Tracy, but otherwise the description agrees exactly with this fungus so that I have no doubt as to the correctness of the determination." No. 2095, uredo stage only, Sept. 10, 1891 (Atkinson).
- Uromyces euphorbiae* Cke. & Pk. On leaves of *Euphorbia preslii*. Auburn, Oct. and Nov. 1891 (Duggar).
- Uromyces appendiculatus* (Pers.) Link. On leaves of cultivated pole beans, *Phaseolus vulgaris*. Auburn, July-Oct. 1890.
- Uromyces rhynchospora* Ellis & Ev. On *Rhynchospora glomerata*. Auburn, July-Oct. 1890-91 (Duggar and Atkinson), Nos. 1316, 2089, 2286 (Det. Dietel).
- Uromyces polygoni* (Pers.) Puckel. Auburn, 1189, on leaves of *Polygonum setaceum*, June, 1890; 2127, Sept. 8, 1891 (Atkinson); 2029, *P. perennis*, Aug. 18, 1891, also from Gallion 1892, (Duggar).
- Uromyces andropogonis* Tracy. On *Andropogon virginicus*. Auburn, 2003, 2003b, 2107, Aug-Dec. 1888-1891, (Det. Dietel).
- Uromyces spermacoces* (Schum.) Thüm. On *Diodea teres*. Forming prominent black sori on the leaves, or by confluence large patches on the stems. 1333, Auburn, July, 25, 1890; 1286 (uredo) Shorters, July 16, 1890.
- Uromyces lespedezae* (Schw.) Pk. Sori thickly scattered on the leaves. Auburn, autumn, 1889-1891. 1589, *Lespedeza sessiflora*; 2309 *L. polystacha*, 1079 *L. procumbens*; 1570 *L. repens*; 1584 *L. sturtei*; also on *L. virginica*, *capitata* and *violacea*.
- Uromyces hyperici* (Schw.) Curt. On leaves and stems of *Hypericum mutilum*. Auburn, 2349, Nov. 15, 1891 (Atkinson); 2349a, all three stages, same date (Duggar); 2286, Oct. 29, 1891 (Duggar); 1593, Prague Junction, Sept. 6, 1890.

- Uromyces hedysari-paniculati* (Schw.) Farl. On leaves of *Desmodium* sp. 1596 LaPine, Sept. 8, 1890; 2070 *D. strictum*? Auburn, Aug. 29, 1891; 2148 *D. paniculatum*, Sept. 13, 1891.
- Uromyces terebinthi* (DC) Wint. Forming numerous minute black sori on the under side of the leaves of *Rhus toxicodendron* var. *radicans*. Uniontown 1261, July 2, 1890; Auburn, 2289, Oct. 28, 1891.
- Uromyces junci* (Desm.) Tul. On stems of *Juncus* sp. Auburn, 2065, 2328, Aug. and Nov., 1891.
- Uromyces minutus* Dietel n. sp. Sori on the under side of the leaves, small, punctiform, or elongate. Uredo-sori surrounded by the ruptured epidermis, cinnamon brown. Uredospores elliptical or spherical, $15-19 \times 11-15 \mu$, brown, spinulose. Teleuto-sori naked, black; teleutospores oval or pyriform, $20-25 \times 10-17 \mu$, epispore smooth, brown, at the apex thickened; stalk longer than the spore, permanent. On leaves of *Carex* sp. 2048, Auburn, Aug. 27, 1891 (Duggar).
- Uropyxis amorphae* (Curtis) Schroeter. On leaves of *Amorpha fruticosa*? or herbaceum? Shorters, 1295, July 16, 1890.
- Aecidium pteleae* B. & C. On leaves of *Ptelea trifoliata*. Wright's Mill, near Auburn, 2010, July 8, 1891 (Duggar and Newman).
- Aecidium impatientis* Schw. On leaves of *Impatiens fulva*. Auburn, 1116, Apr. 22, 1890. Parkinson's Mill, Spring, 1890.
- Aecidium euphorbiae* Gmel. On leaves of *Euphorbia preslii*, Auburn, 2360, Nov. 11, 1891.
- Aecidium sambuci* Schw. Deforming stems and leaves of *Sambucus canadensis*. Auburn, Apr., 1892.
- Aecidium asteratum* Schw. On *Aster* and *Solidago*. Auburn, 1891-92.
- Aecidium plantaginis* Ces. On leaves of *Plantago virginica*? Auburn, 1063, Mar 9, 1890.
- Aecidium epilobii* DC. On leaves of *Oenothera sinuata*. Auburn, 1111, 1112, Apr.-May, 1892, common.
- Aecidium houstoniatum* Schw. On leaves of *Houstonia patens*. Auburn, 1071, Feb. 16, 1890. Common in the winter. The aecidia are amphigenous but generally epiphyllous, the spermatogonia occurring on either side. The aecidia also seem to be somewhat smaller than specimens of this species in 1422, E. & E. N. A. F., and the margins not so strongly recurved. Otherwise the description agrees. The plants of *H. patens* are very short during the winter in places where the aecidia were collected, the leaves being very close to the ground. This may have had some influence in conjunction with the season of the year in the general occurrence of the aecidia on the upper surface of the leaf.

- Caeoma agrimoniae* Schw. On leaves of *Agrimonia parviflora*. Auburn, 2301, Nov. 2, 1891 (Duggar).
- Caeoma interstitiale* Schlecht. On leaves of *Rubus trivialis*, 1933, May, 1889. (This is the aecidial stage of *Puccinia peckiana*).
- Peridermium cerebrum* Pk. On trunks of pine. Auburn.
- Peridermium orientale* Cke. On leaves of *Pinus serotina*. Auburn, 1105, spring, 1891.
- Uredo quercus* Broun. Auburn, deforming leaves of various species of oak, usually of young sprouts from stumps or injured trees. 2176, *Quercus stellata*, Oct. 3, 1891; 2151, *Q. alba*, Sept. 13, 1891 (Atkinson); 2305, *Q. aquatica*, Nov. 5, 1891 (Duggar); also 2273, *Q. sp.*, Oct. 25, 1891.
- Uredo fici* Cast. On leaves of *Ficus carica*, common, Auburn, Mobile, Uniontown.
- Uredo azaleae* Schw. On leaves of *Rhododendron nudiflorum*? Auburn, 2346, Nov. 9, 1891 (Benton).
- Uredo mülleri* Schröter. On leaves of *Rubus villosus*. Auburn, autumn. (Det. Dietel).
- Uredo muhlenbergiae* Dietel n. sp. ad. int. Sori on both sides of the leaves on purple or brown spots, oblong, ochraceous brown. Spores elliptical or spherical, 26-32 x 24-30, brownish yellow, spinulose, with four germ pores. (*Puccinia windsoriae* Schw. on leaves on *M. mexicana* has smaller uredospores. *Uromyces peckianus* also on *Muhlenbergia* from Mexico has smaller uredospores. Whether this species belongs to an already named species cannot be definitely determined without the teliospores). Auburn, 1586. On leaves of *Muhlenbergia diffusa*, Aug. 31, 1890.
- Uredo alabamensis* Dietel n. sp. Sori mostly on the under side of the leaves, single ones upon the upper side, short linear, surrounded by the ruptured epidermis, brown, at the apex very intensely colored, spinulose, with four germ pores. In the uredo sori are numerous paraphyses which are broadened into a knob at the upper end. Auburn, 2231. On leaves of *Sorghum nutans*, Oct. 14, 1891 (Duggar).

GASTEROMYCETES.

- Arachnion album* Schw. Auburn, 1890, on ground.
- Bovistella ohioensis* (F. & M.) Morg. Auburn, common, on ground.
- Cyathus vernicosus* (Bull.) DC. Auburn, 1371, on charred wood, etc. 1890.
- Geaster triplex* Jungh. Auburn, 1725, in shady places, 1890.
- Geaster hygrometricus* Pers. Auburn, 1892, Feb. 22, 1891. 1412, on ground in open woods.

- Geaster limbatus* Fr. Auburn, 1872, Feb. 22, 1891, on ground in open woods.
- Geaster lageniformis* Vit. Auburn, 1411, 1477, 1526a, Aug. 1890 and at other times.
- Geaster saccatus* Fr. Auburn, 1864, 1725a, 1891.
- Lycoperdon rimulatum* Pk. Auburn, 1424.
- Lycoperdon calyptriforme* B. & C. Auburn, 1473, July, 1890.
- Lycoperdon pedicellatum* Pk. Auburn, 1875, on ground in open woods, Feb. 22, 1891.
- Lycoperdon excipuliforme* Scop. Auburn, 1512, etc., common.
- Lycoperdon cepaeforme* Bull. Auburn, 1451, etc., 1890.
- Lycoperdon eximium* Morg. Auburn, 1478, 1890.
- Lycoperdon wrightii* B. & C. Auburn, 1498, 1890.
- Lycoperdon pusillum* Fr. Auburn, 1452, 1890.
- Lycoperdon perlatum* (Pers.) Fr. Auburn, 1404, 1890.
- Lycoperdon echinatum* Berk. Auburn, 1368, 1890.
- Lycoperdon fuliginosum* B. & C.? Auburn, 1481, on decaying logs, Aug. 4, 1890.
- Lycoperdon separans* Pk. Auburn, 1413, 1890.
- Lycoperdon turneri* E. & E. Auburn, 1874, on ground in open woods, Feb. 22, 1891.
- Lycoperdon cyathiforme* Bosc. Auburn.
- Nidularia alabamensis* Atkinson n. Sp. Peridium spherical sessile, reddish brown, roughened, 4-5 mm in diameter, irregularly dehiscing by the breaking into fragments of the upper portion exposing the peridiola which completely fill it, no "rooting" threads. Peridiola lenticular, shining dark or blackish brown, barely 1 mm diameter, corrugated, hard, filled with a whitish pulpy material which is composed of stout irregularly flexuous or branched knotty, strongly tuberculose threads with which the spores are mixed. Spores obovate, hyaline, $4-6 \times 3-4\mu$. On decaying wood. Auburn, July, 1890. Differs from *N. farcta*.
- Octaviania stephensii* (Berk.) Tul. var. *ravenelii* Berk. Auburn, 1446a, 1890.
- Polysaccum pisocarpum* Fr. Auburn, 1516, on ground in lawns.
- Rhizopogon rubescens* Tul. Auburn, 1890, on ground.
- Scleroderma geaster* Fr. Auburn, 1726, on ground. One specimen appears to dehisce in a reticulate rimose fashion, the lower portion later in a stellate manner recurving.
- Scleroderma vulgare* Hornem. Auburn, on ground.
- Scleroderma verrucosum* (Bull.) Pers. Auburn, 1525, on ground, Aug. 1890.

TREMELLINEAE.

- Exidia truncata* Fr. on dead stems of *Vitis rotundifolia*. Auburn, 2391, June 3, 1892.
Hirneola auriformis (Schw.) Fr. On decaying branches. Auburn, 1647.
Tremella virens Schw. On decaying oak branches. Auburn, no 1882.
Tremella mesenterica Retz. On decaying wood. Auburn, 1644, 2380, autumn, 1891.

DACRYOMYCETACEAE.

- Dacryomyces epiphyllus*? On leaves of *Arundinaria tecta*. Auburn, 2327, Nov. 3, 1891.
Dacryomyces azaleae Schw. On dead branches. Auburn, 1643, 1890.
Dacryomyces aurantia (Schw.) Farl. On dead wood, 1450, Auburn, 1890.
Guepinia spathularia (Schw.) Fr. 1642, Auburn, 1890.

AGARICACEAE.

- Amanita spreta* Pk. In open woods, Auburn, 1896, July, 1890.
Amanita ravenelii B. & C. Auburn, 1492, Aug. 1890.
Amanita pantherina DC. Auburn, 1376, 1509, 1441, 1842, July and Aug. 1890.
Amanita phalloides Fr. Auburn, 1527, Aug., 1890.
Amanita caesarea Scop. Auburn, 1379, July and Aug. 1890.
Amanita solitaria Bull. Auburn, 1841, Aug. 1890. Pileus 20 cm diameter, stipe 15 cm long by 3 cm in diameter.
Amanitopsis nivalis Pk. Auburn, 1491, Aug. 1890.
Amanitopsis agglutinosus (B. & C.) Sacc. 1493, Auburn, 1890.
Amanitopsis vaginata (Bull.) Roz. Auburn, 1638, 1623, 1490, July and Aug. 1890.
Armillaria mellea Vahl. Auburn.
Armillaria bulbiger Alb. & Schw. Auburn, 1838, Dec. 1890.
Clytocybe ectypa Fr. Auburn, 1739, Aug. 1890.
Collybia radicata Relh. Auburn, 1894, growing from buried roots, July, 1890.
Hygrophorus cantherellus Schw. Auburn, 1476, summer, 1890.
Lepiota excoriata Schaef. Auburn, 1326, in grassy places and near gardens among weeds, July, 1890.

- Lepiota subremota* B. & C. Auburn, 1390, entirely yellow or white, annulus movable, easily falling away. In grassy fields and open woods, summer, 1890.
- Lepiota americana* Pk. Auburn, 1624.
- Lepiota asprata* Berk. Auburn, 1522, pileus dull white, darker on umbo, stipe darker. Grassy places, Aug. 1890.
- Omphalia grisea* Fr. Auburn, 1400, on ditch bank in sandy soil. 1890.
- Omphalia subpellucida* B. & C.? Auburn, 1732, summer, 1890.
- Panus stipticus* (Bull.) Fr. Auburn, 1895, on dead branches, Aug. 1890.
- Panus torulosus* Fr. Auburn, summer, 1891.
- Panus dorsalis* Bosc. 1840, summer, 1890.
- Pleurotus sapidus* Kalch. Auburn, 1494, on dead branches of trunks, Aug. 1890.
- Pleurotus chioneus* Pers. Auburn, 1362, on decaying wood, small about 1 cm in diameter. Summer, 1890.
- Pleurotus subbarbatus* B. & C. Auburn, 1482, 1641, July, 1890.
- Tricholoma brevipes* Bull. Auburn, summer, 1891.
- Crepidotus dorsalis* Pk. Auburn, 1860, summer, 1890.
- Agaricus silvaticus* Schaeff. Auburn, 1496, in woods, Aug. 1890.
- Agaricus placomyces* Pk. Auburn, 1440, in woods, July, 1890.
- Agaricus campestris* Linn. Auburn, 1444, 1456, 1430, 1708, in grassy fields and lawns, autumn, 1890.
- Hypholoma fasciculare* Huds. Auburn, 1506, on ground, summer 1890.
- Hypholoma sublateralitium* Schaeff. Auburn, 1839, in clusters by side of decaying log. Dec. 1890.
- Psathyrella disseminata* Pers. Auburn, 1504, on ground in cultivated fields. July 1890.
- Stropharia melasperma* Bull. Auburn, 1395, summer 1890.
- Cantherellus cibarius* Fr. Auburn, 1340 (pileus lobed irregular), 1347, 1609, Aug. 1890.
- Cantherellus petersii* B. & C. Auburn, 1495, July 1890.
- Cantherellus infundibuliformis* (Scop.) Fr. Auburn, 1349, pileus very much lobed and irregular, Aug. 1890.
- Coprinus plicatilis* (Curt.) Fr. Auburn, 1485, July 25, 1890.
- Coprinus atramentarius* (Bull.) Fr. Auburn, autumn, 1890.
- Lactarius insulsus* Fr. Auburn, on ground, summer 1891.
- Lactarius deliciosus* (L.) Fr. Auburn, 1849, 1850, on ground in open woods, Oct. 19, 1890.
- Lactarius theiogalus* (Bull.) Fr. Auburn, 1529, on ground July, 1890.
- Lactarius volemus* Fr. Auburn, 1622, on ground.

- Lactarius indigo* (Schw.) Fr. Auburn, 1646, on ground in damp woods near stream, Aug. 1890.
- Lactarius affinis* Pk. Auburn, 1851, on ground, Oct. 19, 1890.
- Lactarius pergamenus* (Swartz) Fr. Auburn, 1620, in woods on ground, Aug. 1890.
- Lactarius piperatus* (Scop.) Fr. Auburn, 1464, in woods on ground, July, 1890.
- Lactarius fuliginosus* Fr. Auburn, 1629.
- Lactarius lignyotus* Fr. Auburn, 1630.
- Lentinus lepideus* Fr. Auburn, 1720, etc. in woods, Aug. 1890.
- Lentinus lecomtei* Fr. Auburn, 1888, 2385, on dead trunks, Feb. 22, 1891.
- Lenzites cookei* Berk. Auburn, 1857, autumn, 1890.
- Lenzites berkelyi* Lev. Auburn, 1635.
- Lenzites betulina* (L.) Fr. Auburn, 1890, on dead trunks, Feb. 22, 1891.
- Marasmius semiustus* B. & C. Auburn, 1477, on decaying grass stems, July, 1890.
- Marasmius hinnuleus* B. & C.? Auburn, 1474, July 1890.
- Marasmius atro-rubens* Berk. Auburn, 1394, summer, 1890.
- Marasmius curreyi* B. & R. Auburn, 2387, on dead blades of *Panicum sanguinale*, Aug. 3, 1891.
- Marasmius opacus* B. & C. Auburn, 1479.
- Marasmius salignus* Pk. Auburn, 1396, summer, 1890.
- Marasmius putredinus* B. & C. Auburn, 1471, on rotting wood, 1890.
- Marasmius capillaris* Morg. Auburn, 1480, July, 1890.
- Marasmius anomalous* Pk. Auburn, summer, 1890.
- Russula adusta* Pers.? Auburn, 1625.
- Russula foetens* (Pers.) Fr. Auburn, 1632, 1736, on ground in woods, Aug. 1890.
- Schizophyllum commune* Fr. Auburn, 1151, on dead branches.

POLYPORACEAE.

- Boletus rubinellus* Pk. Auburn, 1417, in woods on ground, Aug. 1890.
- Boletus russellii* Frost. Auburn, 1501, summer, in woods, on ground, 1890.
- Boletus edulis* Bull. Auburn, 1465, on ground in woods, Aug. 1890.
- Boletus griseus* Frost. Auburn, 1438, summer, 1890.
- Boletus subluteus* Pk. Pinkish variety. Auburn, 1434, July, 1890.
- Boletus albus* Pk. Auburn, 1702, Aug. 1890.
- Boletus hemichrysus* B. & C. Auburn, 1437, at base of stump, in open woods July 1890.

- Boletus pallidus* Frost. Auburn, 1701, on ground in woods, July 1890.
- Boletus affinus* Pk. Auburn, 1351, summer, 1890.
- Boletus chrysenteron* Fr. Auburn, 1616, in open woods on ground, summer 1890.
- Boletus granulatus* Linn. Auburn, 1433, on ground under pines in border of woods, July 1890.
- Boletus brevipes* Pk. Auburn, on sandy soil under pines, Dec. 20, 1891.
- Daedalea confragosa* var. *lenzitoides* Pk. Auburn, 1706, on dead branches, 1890.
- Favolus tessalatus* Mont. Auburn, 2397, on dead branches of *Acer*, 1891.
- Fomes lucidus* (Leys.) Fr. Auburn, 1710.
- Fomes annosus* Fr. Auburn, 1712, on roots of decaying stumps, 1890.
- Fomes carneus* Nees. Auburn, on dead trunk ?
- Fomes curtisii* B. & C. Auburn, 1715, on dead stump, 1890.
- Fomes reniformis* Morg. Auburn, 1345, on dead trunk, 1890.
- Polyporus adustus* (Willd.) Fr. Auburn, 1717, on dead trunk, 1890.
- Polyporus arcularius* (Batsch.) Fr. Auburn, 1369, on dead branches, 1890.
- Polyporus dichrous* Fr. Auburn, 1866, dead branches.
- Polyporus gilvus* Schw. Auburn, 1399, on dead trunks and branches.
- Polyporus hispidoides* Pk. Auburn, 1604, in pine woods at base of tree trunk ; pileus 15 cm. broad, stipe 4 cm. long by 3 cm. in diameter. Aug. 1890.
- Polyporus imbricatus* (Bull.) Fr. 1386, Auburn, 1890.
- Polyporus pilosus* Morg. Auburn, 1633, on trunk of conifer, 2 cm. in diameter, Aug. 1890.
- Polyporus varius* Fr. Shorters, 1332, on roots of tree stump, July 16, 1890.
- Polystictus biformis* Klotz. Auburn, 1468, on dead trunks.
- Polystictus barbatulus* Fr. Auburn, 1876, on branches of *Pinus australis*, Feb. 22, 1891.
- Polystictus cinnabarinus* (Jacq.) Fr. Auburn, 1852, on dead trunks, 1890.
- Polystictus crocatus* Fr. Shorters, 1334, on trunks, July 16, 1890.
- Polystictus hirsutus* Fr. Auburn, 1891, on dead branches, Feb. 22, 1891.
- Polystictus pergamenus* Fr. Auburn, 1863, etc., on dead branches, 1890.
- Polystictus versicolor* (Linn.) Fr. Auburn, 1889, etc., on dead branches, Feb. 22, 1891.

- Poria alabamiae* B. & C. ? Auburn, 1353, on dead branches, 1890.
Merulius confluens Schw. Auburn, 2388, on dead branches, Dec. 1891.

HYDNACEAE.

- Hydnum atro-viridis* Morg. Auburn, 1458, in woods, summer 1890.
Hydnum pulcherrimum B & C. Auburn, 1343, 1466, summer 1890.
Hydnum adustum Schw. Shorters, 1337, July, 1890.
Hydnum reniforme B. & C. ? Auburn, 1631.

THELEPHORACEAE.

- Craterellus cantherellus* (Schw.) Fr. Auburn, 1617, July 1890.
Hymenochaete purpurea Cke. & Morg. Auburn, 1883, on dead branches, Feb. 22, 1891.
Thelephora candida (Schw.) Fr. Shorters, 1346, July 16, 1890.
Thelephora laciniata Pers. Auburn, 1004, in sandy places in old pine fields, July 27, 1890, autumn 1889.
Thelephora schweinitzii Pk. Auburn, 1640, 1738, autumn 1890.
Thelephora sebacea Pers. Shorters, 1339, enveloping dead and living small herbs, July 16, 1890.
Stereum albo-badium Schw. Auburn, 1884, 1885, on dead oak branches, Feb. 22, 1891.
Stereum leveilleianum B. & C. Auburn, 1886, on dead branches of hickory tree, Feb. 22, 1891.
Stereum versicolor (Sw.) Fr. Auburn, on dead branches, Feb. 22, 1891. Form *fasciatum*, Shorters, 1340, July 16, 1890.
Stereum bicolor Fr. Auburn, 1740.
Corticium lactescens Berk. Auburn, 2280, Nov. 2, 1891 (Duggar).

CLAVARIACEAE.

- Clavaria palchra* Pk. Auburn, 1470, on ground, 1890.

SPHAERIOIDEAE.

- Actinonema rosae* (Lib.) Fr. On leaves of cultivated rose, May 1890.
Coniothyrium setariae Atkinson, n. sp. *Perithecia* minute, immersed, ostiolate, 50 μ in diameter. Spores narrowly fusoid with rounded ends, olive-fuliginous, inequilateral, 10-14 x 2-3 μ . On dead stems of *Setaria*, Auburn, 1411, July 25, 1890.
Botryodiplodia juglandicola (Schw.) Sacc. On dead branches of *Hicoria alba*. On branches collected at the same time is *Melanconis hicoriae* Atkinson. Auburn, Jan. 1891.

Cicinnobolus cesatii DBy. On mycelium and conidial stage of various species of the Erysiphaceae. Auburn, 1890-91.

Cornularia persicae (Schw.) Sacc.

Periconia persicae Schw. Synop. Fung. Car. 1290.

Sphaeronema persicae (Schw.) Ellis N. A. F. 946.

Isariopsis pilosa Earle Bull. Torr. Bot. Club, XXIV, 30, 1897.

On dead branches or on dead bark of living branches of *Prunus persica*. Common at Auburn. This old species seems to be widely distributed and common in the eastern U. S. At least I found it very common in both North Carolina and South Carolina, at Auburn, and it is common here at Ithaca, N. Y. It may be found at almost any season of the year, and usually gives a loose velvety appearance to the branches when it is abundant. It seems to differ generically from any of the genera into which it has heretofore been placed, even from *Cornularia*, since the spores are borne inside an excipulum which is at the end of the stalk, and not at the ends of the thread which form the stalk as in *Isariopsis*.

Diplodia maura E. & E. On branches of *Pirus communis*. 1916, Mobile and Auburn, 1890.

Diplodia herbarum (Corda) Lev. On dead stems of *Lactuca*. 2411, Auburn, May 1, 1892.

Diplodia gossypina Cke. On old capsules of *Gossypium herbaceum*, 2142, Brundige Sept. 5, 1891. Spores elliptical, or oblong, or ovate-oblong, $22-30 \times 12-14\mu$. Larger than measurements given by Cooke.

Hendersonia effusa B. & C. Forming large linear black patches more or less effuse, and sometimes broader by coalescence. On blades of *Aristida purpurascens* var. *minor*. 2215, Auburn, Oct. 11, 1891.

Hendersonia arundinacea (Desm.) Sacc. On dead stems of *Chrysopogon nutans*. 2432a, Auburn, Nov. 1, 1891 (Duggar).

Hendersonia erianthi Atkinson, n. sp. Perithecia scattered, immersed, erumpent, of coarse texture, $150-200\mu$. Spores oblong-elliptical, 3-septate, little constricted, $10-15 \times 3-3.5\mu$, dark brown. Differs from *H. donacis* Sacc. Associated with *Lophidium anomalum* Atkinson. On dead stems of *Erianthus*, 2345, Nov. 12, 1891 (Duggar).

Hendersonia officinalis Atkinson, n. sp. Perithecia immersed, erumpent, usually on upper surface of the leaves, rupturing the epidermis into several clefts and appearing as a faintly colored body between the clefts with a prominent ostium. Perithecial wall fragile, colored near the ostium and difficult to distinguish from the dead cells of the host. Below the broadly conical apex, apparently only the stroma from which the basidia arise, the entire wall being of a delicate texture. Basidia hyaline, $20-25 \times 2-3\mu$. Spores fu-

soid, elliptical, sometimes narrower below, straight or inequilateral, $18-25 \times 5-7\mu$, mostly continuous, but a few 2-septate, not constricted, faintly fuliginous, or olivaceous. Spores probably young, otherwise referable to *Stagonospora*. On dead leaves of *Sassafras officinalis*, 2183, Auburn, July 29, 1891 (Duggar).

Hendersonia crataegicola Atkinson, n. sp. Spots obicular $1-3$ mm., dry, dirty white above, duller below, bordered by a narrow and more or less raised dark line. Perithecia black, minute, $120-170\mu$, epiphyllous mostly, prominent, erumpent. Spores narrowly ovate, 3-septate, rarely 2-septate, not constricted, fuliginous, lower cell nearly hyaline, $8-12 \times 3.5-4\mu$. On leaves of *Crataegus flava*, 2080, Auburn, Aug. 1890. Near *H. piricola* Sacc., on *Pirus communis*, which is said by Saccardo to be the pycnidial stage of *Sphaerella lucillae*, but spores narrower in proportion to length (vide Rab. F. E., 2155).

Phlyctaena gossypii Sacc. On dead stems of *Gossypium herbaceum*. Auburn, 1820a, Jan. 27, 1891.

Phoma subcircinata E. & E. On pods of *Phaseolus vulgaris* (butter bean) covering the pods with thickly scattered perithecia. Spores measure up to $10-12\mu$ long; given as $5-6\mu$ long by Ellis in specimens from *P. lunatus* from N. J. (Proceed. Acad. Nat. Sci. Phila. 158, 1893). Auburn, 2137.

Phoma lathyrina Sacc. Perithecia on stems, scattered or seriate, permanently veiled by the epidermis, depressed, convex, minute ostiolum $200-300\mu$ in diameter. Spores $6-10 \times 2-2.5\mu$, hyaline, oblong with pointed ends or navicular, when fresh 2-guttulate, straight or inequilateral. On stems of *Dolichos sinensis*, Auburn, 1006, Oct. 16, 1889.

Phoma gossypii Sacc. On dead stems of *Gossypium herbaceum*, Auburn, 1820b, Jan. 27, 1891. Associated with *Phlyctaena gossypii* Sacc.

Phoma gloeosporioides Atkinson, n. sp. Perithecia thickly scattered over the upper surface of the leaves, erumpent, black, prominent, broad and rounded apex, wall of very small parenchymatous cells, $200-300\mu$ in diameter. Spores numerous, hyaline, oblong, pyriform, 1-guttulate, the plasma divided in the middle, sometimes sharp pointed below, resembling spores of certain species of *Gloeosporium*, $5-9 \times 1.5-2\mu$. On dead leaves of *Quercus falcata*?, Auburn, 1104, Feb. 1890.

Phoma astericola Atkinson n. sp. Blackening the stems and leaves of *Aster* sp. Perithecia on stems immersed, apex emergent, black, shining, orbicular or elongate, wall black, variously sculptured on the outside by fine lines running in different directions caused by varying form of the cells. Spores ovate-elliptical, $12-17 \times 5-7\mu$ granular. Differs from *P. iowana* Sacc. Auburn.

- Phyllosticta pirina* Sacc. Forming small whitish spots on leaves of *Pirus communis*, Mathews, June 17, 1891. 1829, Gold Hill, on leaves of *Pirus malus*, Sept. 1890.
- Phyllosticta catalpae* E. & M. Forming circular pale brownish spots on leaves of *Catalpa bignonioides*. Auburn, 2431, Aug. 15, 1891.
- Phyllosticta adusta* E. & M. On seedling leaves of lemon (*Citrus limon*). Auburn, 1012, Oct. 19, 1889. Spores are longer than the measurements given by Ellis on leaves of *Citrus aurantiaca* from Florida.
- Phyllosticta batatae* Thüm. On leaves of *Ipomoea batata*. Auburn, 2168, Oct. 4, 1891.
- Phyllosticta violae* Desm. Form *violae-tricoloris* Sacc. On leaves *Viola tricolor*. Auburn, 1824, Jan. 29, 1891.
- Phyllosticta gossypina* E. & M.? On dead leaves of *Gossypium herbaceum*. Auburn.
- Phyllosticta circumvallata* Wint. On leaves of *Liriodendron tulipifera*. Auburn, 2420, July 18, 1892 (Richards).
- Phyllosticta amaranti* E. & K. On leaves of *Amarantus retroflexus*. Auburn, 2055, Aug. 5, 1891 (Duggar).
- Phyllosticta phytoeciae* Cke. On leaves of *Phytolacca decandra*. Auburn, 2421, July 18, 1892 (Richards).
- Phyllosticta rhododendri* West. On leaves of *Rhododendron nudiflorum*? Auburn, 2419, July 18, 1892.
- Phyllosticta desmodii* E. & E. On leaves of *Desmodium* sp. Auburn, June 28, 1892.
- Phyllosticta leucopae* Atkinson, n. sp. Spots amphigenous, sub-orbicular, white, dry, thin, with a narrow brown border. Perithecia amphigenous, black, flattened, prominent, giving a minutely black dotted appearance to the spots, 120-140 μ . Spores cylindrical hyaline, 10-14 $\times$ 3-4 μ . Leaves of *Pirus leucocarpa*. Pike Roads 2018, July 9, 1891.
- Phyllosticta maclurae* E. & E. On leaves of *Maclura aurantiaca*. Auburn, August, 1893 (Duggar).
- Phyllosticta acericola* C. & E. Forming orbicular dark gray or light colored spots on leaves of *Acer rubrum*. Perithecia epiphyllous spores 7-9 $\times$ 5-7 μ granular. Auburn, No. 1996.
- Phyllosticta siliquastri* Sacc. On leaves of *Cercis canadensis*. Wright's Mill, 2030, Aug. 7, 1891 (Duggar and Newman).
- Septoria galliorum* Ellis. Spores 20-25 $\times$ 1 μ , perithecia black, prominent. On dead stems of *Houstonia patens*. Auburn, Feb. 16, 1890. Sometimes associated with *Aecidium houstoniatum*.
- Septoria lepidiicola* E. & M. Forming small circular light colored spots on leaves of *Lepidium virginicum*? Auburn, 1096, Feb. 9, 1890.

- Septoria lactucae* Pass. On leaves of *Lactuca lucophaea*. Auburn, 1956, June 26, 1891 (Newman).
- Septoria sonchifolia* Cke. Forming numerous indefinitely bordered brownish orbicular spots. Perithecia immersed, only apex erumpent, membranaceous, delicate, 100–150 μ , wall light yellow except around the ostium where it is blackish. Spores 20 x 1 μ . Otherwise as described. On leaves of *Sonchus oleraceus*. 2410, Auburn, 1892.
- Septoria bromi* Sacc.? On leaves of *Elymus*, with *Leptosphaeria elymi*. Auburn, 1175c, July 5, 1890.
- Septoria xanthii* Desm. Forming small indefinite, pale spots on leaves of *Xanthium strumarium*. Uniontown, 1256, July 11, 1890.
- Septoria virgaurae* Desm.? On leaves of *Solidago*. Auburn.
- Septoria violae* West. Forming circular dark brown spots, with a lighter center, on living leaves of *Viola primulaefolia*. Shorters, 1299, July 16, 1890.
- Septoria sambucina* Pk. On living leaves of *Sambucus canadensis*, forming dark spots, the larger ones with a light center. Auburn, 2063, Aug. 24, 1891 (Duggar).
- Septoria sonchinea* Thüm. Forming purple red spots on living leaves of *Sonchus oleraceus*. Auburn, 1899, Feb. 25, 1891 (Benton).
- Septoria rubi* West. Forming irregular light brown spots on leaves of cultivated *Rubus*. Auburn, 1563, Aug. 8, 1890.
- Septoria rubi* var. *alba* Pk. Forming small white spots on living leaves of *Rubus trivialis*? Associated with *Cercospora rubi* and *Caeoma interstitiale*. Mobile and Auburn. Apr. 1891.
- Septoria oenotherae* West. Forming circular spots on living leaves of *Oenothera sinuata* (not *Oe. biennis* as stated in Jour. Elisha Mitch. Soc. X, II, 77, 1893). Auburn.
- Septoria graminum* Desm. Forming brown, irregular, elongate, spots on living leaves of *Panicum sanguinale*, or involving the larger part of the terminal portion of the leaf. Auburn, 1943, Aug. 29, 1891.
- Septoria erectites* E. & E. Forming brown, usually angular spots on living leaves of *Erechtites hieracifolia*. Auburn, 2162, Sept. 10, 1891 (Duggar).
- Septoria cerastii* Rob. et Desm. On dead or languid leaves of *Cerastium arvense*. Auburn, 1915, March 25, 1891.
- Septoria brunellae* E. & H. Forming circular grayish or light brown spots seated in larger brown areas, on living leaves of *Prunella vulgaris*. Shorters, 1309, July 16, 1890.
- Septoria speculariae* B. & C. On languid leaves of *Specularia perfoliata*. Auburn, 1108, Mar. 28, 1890.
- Septoria dianthi* West. Forming purple bordered ochraceous spots on living leaves of *Dianthus*. Auburn, Mar. 20, 1891.

- Septoria alabamensis* Atkinson. Forming indefinite spots occupying irregular areas on living leaves of *Nepeta glechoma*. Auburn, 1825, Jan. 29 and Feb. 27, 1891.
- Septoria fraxini* Desm. Forming brown indefinite spots on living leaves of *Fraxinus platycarpus*. Pike Roads, July 9, 1891.
- Septoria confusa* Atkinson n. sp. Spots small, circular, 2-3mm in diameter, center grayish brown, or whitish, with an indefinite reddish border. Perithecia few. Spores filiform, 1-3-septate, $25-35 \times 2\mu$. On leaves of *Jussiaea leptocarpa*. Auburn, 1976, Aug. 24, 1891 (Duggar and Newman). Listed as *S. jussiaeae* E. & K., in Jour. Elisha Mitch. Sci. Soc. X, II, 77, 1893, but no description was ever published of this name.
- Sphaeronema corneum* E. & E. In orbicular dark brown spots on languid leaves of *Oenothera sinuata*. Agrees well with the description of this plant, except that the spores are $5-8 \times 1.5\mu$, straight or more usually inequilateral. Auburn, 1953, July 26, 1891.
- Stagonospora paspali* Atkinson n. sp. Spots elliptical or irregular with a purple border and a minute central ochraceous whitish area, sometimes confluent. Spores hyaline, $24-28 \times 7-9\mu$, 2-septate, 3-guttulate when young, oblong to elliptical, with broadly rounded ends. Perithecia globose flattened, seated on the border of the white spots in the darker area. On leaves of *Paspalum laeve*. Auburn, 1941, July 18, 1891; Spores in this specimen measure a little smaller. Wright's Mill, on *Tricuspis sessleroides*, 2004, July 11, 1891 (Duggar).
- Vermicularia circinans* Berk. On *Allium*, cultivated. Auburn.

EXCIPULACEAE.

- Amerosporium oeconomicum* E. & T. Forming brownish orbicular spots on living leaves of *Dolichos sinensis*. Auburn, 1557, July 22, 1890 (Atkinson); 2207, Oct. 1, 1891 (Duggar).
- Dothichiza serotina* Atkinson n. sp. In large dead area occupying one half of the leaf. Perithecia hypophyllous, black erumpent, appearing as numerous black points, $50-80\mu$, in diameter, at last broadly opened, margin more or less recurved. Spores cylindrical continuous, hyaline, $10-14 \times 1.5-2.5\mu$. On leaves of *Prunus serotina*. Auburn. Sometimes associated with *Discosia artocreas*. Very different from *D. padi* on branches of *Prunus padus* in Arduenna.
- Schizothyrella hysteroideis* Atkinson n. sp. Perithecia 1-2 mm. in diameter, immersed, erumpent, membranaceous, in drying somewhat collapsed and fluted, brown, obconic, laterally compressed by the longitudinally split epidermis of the host, so that it appears

rimose, margin incurved when dry, disk pale. Perithecia rarely resting by the obconic bases on the epidermis, then not hysteroïd, margin in all sometimes irregularly fissured. Spores filiform, septate, curved or flexuous, hyaline, $80-120 \times 2\mu$; finally separating into segments of variable lengths which are 1-3 septate. On dead culms of *Chrysopogon nutans*. Auburn, 2439, Nov. 1, 1891 (Duggar).

LEPTOSTROMACEAE.

Entomosporium maculatum Lev. On living leaves of *Cydonia vulgaris*. Gold Hill, 1831, Sept. 1890.

Discosia artocreas (Tode) Fr. On dead leaves of *Prunus serotina*. Spots large, irregular, blackish underneath bordered by a darker line. Auburn, July 31, 1891 (Duggar); 2000a, on leaves of *Acer rubrum* associated with *Rhytisma acerinum*, July 22, 1891.

Discosia rugulosa B. & C. On dead leaves of *Hicoria alba*. Spores nearly cylindrical, straight or curved, $12-15 \times 1.5-2.5\mu$. Setae arising obliquely from the abruptly pointed ends, 10-15 μ long. Auburn, 1969, July 18, 1891 (Newman).

Leptothyrium cylindrium Atkinson n. sp. Spots broadly elliptical, grayish white, bordered by light brown. Perithecia amphigenous, dimidiate, black, astomate, opening by a pore or variously cleft, longitudinally radiate, 300-400 μ , depressed. Spores cylindrical with abruptly narrowed ends, hyaline, straight or little curved, $18-25 \times 3.5-4\mu$. On leaves of *Arundinaria tecta*, Auburn, 1088, autumn 1889. Near *L. subtectum* Sacc.

Leptothyrium dryinum Sacc. Forming brownish irregular spots on living leaves of *Castanea pumila*, 1569, Aug. 11, 1890; also on leaves of *Hicoria alba*, 1977, July 24, 1891 (Duggar and Newman). Auburn.

Melasmia acerina Lev. Forming black suborbicular rugulose spots, surrounded by a pale yellowish indefinite border, on living leaves of *Acer rubrum*. Auburn 2150, Sept. 13, 1891.

Melasmia setariae Atkinson n. sp. Spots epiphyllous, elliptical-oblong, small, confluent or thickly scattered over a large part of the leaf. Continuous membrane covering several perithecia or sporogenous groups, composed of layers of dark brown angular cells, 3-4 μ in diameter. Sporogenous stroma occupying and completely filling the cavity of the epidermal cells. Spores oblong-elliptical, with rounded ends, hyaline, $12-14 \times 2.5-3\mu$. Basidia short, colored. On living leaves of *Setaria glauca*. Auburn, 2184, Sept. 27-29, 1891.

Melasmia quercuum Atkinson n. sp. Stroma black, orbicular, thin, crustaceous, 2-3mm; acervuli irregularly dehiscing. Spores hyaline to olivaceous, broadly fusoid, curved $20-30 \times 7-8\mu$.

Occasionally seated in the stroma are broadly conical shining perithecia which contain minute asci 35-40 x 8-10; spores in the same not developed. This may be the stylosporous stage of *Rhytisma tostum* B. & C., which is reported from Alabama on *Q. lan-cifolia*. *R. tostum* B. & C., Rav. F. Am. 177, possesses sterile perithecia in concentric rings, forming circular groups, but there is no continuous stroma as in the specimens here described on *Q. phellos*. The size and shape of the spores suggests *R. erythrosporum* B. & C. on leaves of *Q. virens* from California but they are not borne in asci. Auburn, 2081, on leaves of *Q. phellos*.

Melasmia gleditschiae (Lev.) Atkinson.

Sacidium gleditschiae Lev. Ann. sci. nat. p. 64, 1845.

Leptostroma hypophyllum B. & Rav. F. Car. III, 45.

Melasmia gleditschiae E. & E. Jour. Mycol. 45, 1888.

Melasmia hypophylla (B. & R.) Sacc. Syll. Fung. X, 419, 1892.

On leaves of *Gleditsia tricanthos*. Auburn, 2081, autumn, 1889.

Piggotia fraxini B. & C. Forming minute black stromata on the under side of the leaves of *Fraxinus*. Auburn, 2023, autumn, 1890.

MELANCONIEAE.

Colletotrichum gossypii Southworth. On cotyledons, stems, leaves and fruit of *Gossypium herbaceum*. Generally distributed throughout the cotton growing region.

Colletotrichum lindemuthianum (Sacc. & Mag.) Scribner. On leaves, stems and pods of *Phaseolus vulgaris*. Auburn, 2056, Aug. 6, 1891.

Colletotrichum lineola Corda. On leaves of *Sorghum vulgare*. Auburn, 1550, July 1890. Numerous acervuli in broadly elliptical spots; setae single, or few in a tuft or effuse covering large areas. Conidia 25-35 x 4. On *Sorghum halapense* spots small, purple bordered. On dead leaves of *S. halapense* spots not evident, 1576, Wright's Mill, July, while at same place on living leaves spots evident, 1577; 2087a, Montgomery, Sept. 8, 1891; 1962, on *Panicum maximum*, agrees with specimens on *S. halapense* but setae longer, 60-100 μ . The setae agree with those of *Vermicularia sanguinea* E. & E., but spores longer than given in description, and no perithecia present. This is suggested by Saccardo as the young state of a *Vermicularia* (III, p. 376). Spots sometimes occupying large areas on the margin of the leaf.

Colletotrichum jussiaeae Earle. Forming purple bordered yellowish circular, white, arid, spots on the leaves of *Jussiaea decurrens*. Auburn, 2022, Aug. 27, 1891.

- Cylindrosporium padi* Karst. On leaves of *Prunus serotina*, Auburn, July 3, 1891; also on leaves of *Prunus angustifolia*, Uniontown, July, 1890.
- Cylindrosporium minor* E. & K. Forming indefinite brownish spots on leaves of *Fraxinus platycarpus*? Pike Roads, July 9, 1891.
- Cylindrosporium celtidis* Karle. On leaves of *Celtis mississippiensis*, 2351, Montgomery, July, 1891.
- Cylindrosporium saccharinum* E. & E. On leaves of *Acer rubrum*, 2222, Oct. 14, 1891 (Duggar). Leaves pale, minutely spotted with light colored areas in which the acervuli are seated. Acervuli mostly hypophyllous, minute. Conidia exuding in long coiled gelatinous masses, curved or rarely straight, $25-30 \times 3-4\mu$, 3-septate. Agrees well but spores shorter and acervuli not evident on upper surface.
- Cylindrosporium ulmicolum* E. & E. On leaves of *Ulmus americanus*. Auburn, 2260, Oct. 23, 1891. In minute yellowish spots scattered over the leaf; cirrhi hypophyllous, prominent, yellowish.
- Cylindrosporium rubi* E. & E. In minute spots on the upper side of leaves of *Rubus*, 1252, Uniontown, July 11, 1890.
- Cylindrosporium steironemae* Atkinson n. sp. Forming brownish orbicular spots 3-6 mm in diameter, usually with a lighter center. Spores $30-70 \times 1.5-2\mu$, faintly 3-5-septate, curved, terete, issuing in long gelatinous threads. Acervuli $100-120\mu$ in diameter. On leaves of *Steironema*. 2404, Auburn, May 9, 1892.
- Cylindrosporium gnaphalicolum* Atkinson n. sp. Spots small irregular, or small and seated on pale areas, black. Acervuli amphigenous, large, irregular, elevating the epidermis. Spores vermiform, $50-90 \times 2.5-3\mu$, 6-15-septate. On living leaves of *Gnaphalium* sp. Auburn, 1974, July 24, 1891 (Duggar & Newman).
- Darlucula filum* (Biv.) Cast. On various Uredineae, as *Coleosporium*, *Uromyces*, *Puccinia*, etc. Auburn, Shorters.
- Gloeosporium septorioides* Sacc. Forming dark bordered ashen gray spots on living leaves of *Quercus aquatica*. Auburn, 2424, Aug. 26, 1892 (Richards).
- Gloeosporium fructigenum* Berk. On fruit of *Pirus malus*. Auburn, 2076, Aug. 24, 1891.
- Gloeosporium serotinum* E. & E. On leaves of *Prunus serotina*, affecting leaves which are attacked by *Euxoascus farlowii*. Auburn, Apr. 1891. The leaves in Ellis N. A. F. which have type specimens of this *Gloeosporium* were probably first deformed by this same *Euxoascus*.
- Gloeosporium fusarioides* E. & K. On living leaves of *Asclepias* sp. Forming orbicular spots 2-3 mm. in diameter, which are amphigenous, light colored with a dark border. Spores mostly $20-25\mu$

long. While the leaf spots do not agree well with the description, the spores agree well with those of *Gloeosporium fusarioides* on *Asclepias syriaca*, N. A. F. 3074. Auburn, 1274.

Gloeosporium quercinum West. Forming minute spots on leaves of *Quercus*. Auburn, Sept. 4, 1890.

Gloeosporium vexans Atkinson n. sp. On stems of *Melilotus alba*. Acervuli thickly scattered appearing to the eye as small dark points, in age depressed. Spores oblong, rounded at the distal end, abruptly narrowed at lower end into a V-shaped point. Sometimes slightly broader at the lower end, or narrowed in the middle, continuous. Near *Gloeosporium medicaginis* E. & E. Auburn, 1773, Aug. 1890.

Gloeosporium ampelophagum (Pass.) Sacc. On leaves, branches, and fruit of cultivated *Vitis*. Auburn.

Melanconium sphaerospermum (Pers.) Link. On stems of *Arundinaria tecta*, Auburn, Sept. 9, 1891. Spores about 5μ in diameter, acervuli linear, 3-6 mm. long. The spores in this specimen are smaller than the measurements given in the description, and also smaller than in other specimens which I have seen on *Arundinaria*, but agree with the measurements as given for *M. donacis* Thüm, which was first described as a variety of *M. sphaerospermum*. This would seem to indicate that the difference between the two species can be accounted for by the variation in the size of the spores.

Pestalozzia flagellata Earle. On large orbicular or irregular, brown spots on leaves of *Quercus nigra*. Auburn, 2187, Sept. 26, 1891 (Duggar).

Pestalozzia minuta T. & E. On bark of *Vitis*. Auburn, 1836, Feb. 1891. Also on dead limbs of *Hicoria alba*, Jan. 1891.

Pestalozzia clavispora Atkinson n. sp. Acervuli minute, irregularly scattered, circular, immersed, sometimes epidermis blackened, opening by a minute pore, $15\text{--}200\mu$ in diameter. Spores exuding in long black coils which later dissolve and form more or less effuse black areas, clavate, straight or inequilateral, 4-septate, 3 middle locules colored, middle one most intense, upper one next in intensity and lower one of the three least colored or nearly hyaline, lower end cell long conoid, upper one short conoid with 3 rarely 4 setae which are $25\text{--}35\mu$ long, basidia short. Near *P. longisetata* Speg. On fallen leaves of *Quercus rubra*? Auburn, 2280, Oct. 3, 1891.

Pestalozzia turgida Atkinson n. sp. Acervuli in large blackish areas, discoid, circular, triangular or oblong, rupturing the epidermis in a stellate manner, margin at length more or less recurved, black. Spores broadly elliptical, inequilateral or curved, $22\text{--}28 \times 8\text{--}12\mu$, 5-septate, 4 middle locules dark brown, end ones hyaline or fulgi-

nous, conoid. Seta 1, 8-15 μ long, hyaline. Basidia 6-12 μ long. On dead leaves of *Crataegus*. Auburn, Nov. 1, 1891.

Pestalozziella gossypina Atkinson n. sp. Acervuli broad, circular, depressed, immersed, slightly elevating the epidermis. Spores narrowly elliptical-cylindrical, straight or curved, hyaline, continuous, coarsely granular, 25-35 x 5-6 μ . Cilia as many as eight, four near each end, two of these quite near the end, the other pair of each tetrad, $\frac{1}{8}$ - $\frac{1}{4}$ the distance from the end. Number variable, perhaps because easily deciduous. Base of seta stout, then abruptly long ciliate. Cilia 20-30 μ . On stems of *Gossypium herbaceum*. Auburn, 1820, Jan. 27, 1891.

Septogloeum profusum (E. & E.) Tr. & Earle. On living leaves of *Ulmus alata*? Pike Roads, 2430, July 9, 1891.

MUCEDINEAE.

Chromosporium aeruginosum (Corda) Sacc. Forming broadly expanded greenish olive patches on decaying wood. Auburn, 1002, Oct. 1889.

Aspergillus glaucus (L.) Link. On decaying leaves of *Ipomoea*. Auburn 1461a, July 23, 1890.

Monilia fructigena Pers. On fruit of *Prunus persica*. Auburn, 2418, July 1, 1892 (Richards).

Microstroma juglandis (Bereng.) Sacc. On living leaves of *Hicoria alba*. Auburn, 1123, Apr. 28, 1890; Uniontown, 1260, July 12, 1890.

Didymaria spissa Harkness. On living leaves of *Solidago*. Shorters, 1305, July 16, 1890. Spots amphigenous, usually hypophyllous, minute, sometimes elongate, downy white from the numerous tufts of hyphae and conidia. Hyphae in fascicles dense below, spreading above, flexuous, scarred at the angles where the conidia have been abjoined, 20-70 x 4-5 μ , hyaline. Conidia acrogenous becoming pleurogenous by the continued growth of the hyphae, ovate-oblong-short lanceolate, hyaline, 1-2-septate, the larger ones 2-septate, 20-30 x 7 μ . This differs in length of hyphae from those described by Harkness (Fung. Calif. p. 17) but the difference can be accounted for by the favorable conditions for growth in the Alabama specimens, the hyphae thus becoming longer and the large conidia 2-septate.

Ramularia liriodendri E. & E. Forming circular spots on living leaves of *Liriodendron tulipifera*. Auburn, Oct. 1889 (Benton).

Ramularia pratensis Sacc. On leaves of *Rumex*. Auburn, 1942, July 20, 1891 (Duggar). Typically forming suborbicular ochraceous spots with a darker border. Hyphae sometimes little branched.

Conidia not seen in chains but the ends on many show the scars of concatenate spores.

Ramularia areola Atkinson. Forming angular mildewed areas on leaves and bracts of *Gossypium herbaceum*. Auburn, 1790, Sept. 29, 1890. Quite common at Auburn and in other parts of the State.

Ramularia tulasnei Sacc. On leaves of cultivated strawberry. Auburn, 1795, Oct. 1890.

Ramularia virgaurae Thüm. Forming pale yellow elongate spots on leaves of *Soildago*. The conidia in the Alabama specimens are concatenate. Auburn (Wright's Mill), 1095, Mar. 27, 1890.

Rhinotrichum macrosporum Farl. Forming dirty white or ochraceous patches on dead capsules of *Gossypium herbaceum*. Auburn, 1775, Oct. 1890.

Rhinotrichum tenellum Berk. Forming whitish or cream colored patches on dead capsules of *Gossypium herbaceum*. Auburn, 1779, autumn 1890.

Olpitrichum carpophilum Atkinson. Forming cream colored or whitish patches on dead capsules of *Gossypium herbaceum*. Brundige, 2139, Sept. 5, 1891.

Sporotrichum globuliferum Speg. On dead hymenopterous insect. Auburn, 2318.

Tricothecium roseum (Pers.) Link. Common on decaying substances, leaves of *Prunus persica*, *Ficus carica*, carpels of *Gossypium herbaceum*, etc. Auburn.

DEMATIEAE.

Coniosporium gramineum (E. & E.) Sacc.? Forming blackish patches on culms of *Arundinaria tecta*. Conidia $3.5-5\mu$, arising from a more or less determinate stroma. Auburn, 2386, 1891.

Coniosporium arundinellae E. & T. Forming minute black spots scattered over the surface of dead leaves or dead spots of the leaves of *Arundinaria tecta*. Auburn, Dec. 25, 1888; 1081, on dead blades of *Panicum* sp., Jan. 1890, spores $7-12\mu$.

Cladosporium gramineum Corda. On dead leaves of *Avena sativa*. With *Epicoccum neglectum*. Auburn Jan. 22, 1890 (Newman).

Cladosporium gloeosporioides Atkinson n. sp. Hyphae in loose spreading tufts, irregularly flexuous, dark, nearly hyaline at apex, sometimes slightly notched, $80-120 \times 4-5\mu$. Conidia oblong, little pointed below, hyaline, strikingly like spores of certain species of *Gloeosporium*. Auburn, 2064, forming circular light brown spots on leaves of *Ascyrum stans*; Aug. 29, 1891 (Atkinson); 2170, circular or irregular spots on leaves, or extensive areas on stems of *Hypericum mutilum*, Sept. 2, 1891 (Duggar.). Very different from *Gloeosporium cladosporioides*.

- Cladotrichum leersii* Atkinson n. sp. Affecting large areas of the leaf which are dead and olive brown. Hyphae scattered or subfasciculate, $100-200 \times 4-5 \mu$, or longer, flexuous, geniculate, at the knees enlarged and knotty, branched or simple. Conidia ovoid, hyaline, 1-septate, $10-13 \times 9-11 \mu$, at the nodes and ends of the hyphae. On leaves of *Leersia virginica*. Auburn, 2051, Aug. 26, 1891.
- Fusicladium pirinum* (Lib.) Fuckel var *pyracanthae* Thüm. On fruit of *Crataegus pyracantha*. Auburn, 2058, July and Sept., 1891 (Duggar and Newman).
- Fusicladium effusum* var. *carpineum* E. & E. On upper surface of leaves of *Carpinus carolinianus*. Hyphae stouter than in specimens in Ell. & Ev. N. A. F., 2793, and in description, being $7-9 \mu$, and conidia shorter, and more thinly effuse; otherwise agrees. Auburn, 2307, Oct. 30, 1891.
- Piricularia grisea* (Cooke) Sacc. Forming elliptical or suborbicular spots on leaves of *Paspalum* sp., 1950, July 11, 1890; 1960 on *Panicum sanguinale*, July 1, 1891; 2024, *Paspalum undulatum*, July 25, 1891; 1531, German millet, Aug. 1890.
- Piricularia euphorbiae* (T. & E.)
Scolecotrichum euphorbiae T. & E. Bull. Torr. Bot. Club XXIII.
 On leaves of *Euphorbia preslii*. Auburn, 2013, (Wright's Mill) Aug. 7, 1891 (Duggar and Newman). This seems to agree better with *Piricularia* than with other related genera and resembles *P. grisea* generically. The conidia are hyaline and 1-3 septate, are at first acrogenous but become pleurogenous by the continued growth of the hyphae just as in *Cercospora*, *Piricularia* and other genera.
- Polythrincium trifolii* Kunze. On leaves of *trifolium hybridum*. Auburn, 1084, Wright's Mill, Feb. 1890 (R. S. Edwards).
- Macrosporium nigricantium* Atkinson. On leaves of *Gossypium herbaceum*. Common in various parts of the state, 1890-93.
- Macrosporium cookei* Sacc. Forming orbicular pale spots marked by darker concentric rings on leaves of *Datura stramonium*. Auburn, 2027, Aug. 1891 (Duggar and Newman).
- Macrosporium sarcinula* Berk. On decaying fruit of *Citrullus vulgaris*. Auburn, 2390, Jan. 20, 1892.
- Macrosporium solani* E. & M. ? On decaying red pepper (*Capsicum annuum*), Auburn, summer, 1890.
- Macrosporium pisorum* Cke. In spots on leaves of *Pirus communis*. Mathews, June 17, 1891.
- Sporodesmium quadratum* Atkinson n. sp. Forming thin effuse patches on under side of leaves of *Crataegus* sp., no tufts or sporodichia. Spores arising from the mycelium on short slender hyaline or fuliginous pedicels, irregularly globose, olive then very black, locules minute, middle septa often giving the spore a quad-

rate appearance as viewed from above. Montgomery (Highland Park), Oct. 10, 1891.

Periconia pycnospora Fr. On dead stems of *Dolichos sinensis*. Auburn, 1782a, Dec. 1890.

Harpocephalum Atkinson n. gen. Hyphae brown, erect, simple, or with a few very short branches, distal end sterile. Spores forming a head on one side of the hypha arising from the ends of a very short and compact tuft of branches. Spores catenulate, globose, continuous, brown.

Harpocephalum dematioides Atkinson n. sp. Hyphae 200–250 x 8–9 μ , septate, dark brown, tapering to a slender point, curved or rarely sigmoid. Spores forming an irregular glomerule, catenulate, globose, at length minutely echinulate, light brown, 5–7 μ in diameter. On leaves of *Cinna arundinacea*. Auburn, 2177, Sept. 15, 1891 (Newman).

Cercospora euphorbiaecola Atkinson n. sp. Spots amphigenous, suborbicular, greyish brown with a narrow raised black border. Hyphae mostly hypophyllous, arising from a blackish olive tubercle, simple, dilutely colored, slightly flexuous, 25–40 x 4 μ . Conidia narrowly lanceolate, 80–120 x 3.5–4 μ , faintly 5–10-septate, dilutely colored. This may be identical with *C. euphorbiae* Speg. (Bull. Soc. Mycol. p. 108, 1893), and if so would become a synonym of *C. euphorbiae* K. & S. (Jour. Mycol. V, 76, 1889.) On leaves of *Euphorbia*, Auburn, Aug. 16, 1892 (Richards).

Cercospora moricola Cke. Forming brownish orbicular spots with a pale indefinite border. In age the center of the spots is dirty white and in moist weather the conidia are very abundant giving a light pinkish or roseate tint in mass. Hyphae hyphopyllous, very short, sometimes scarcely projecting above the substratum, hyaline or olivaceous. Conidia hyaline falcate or rarely straight or flexuous, 30–70 x 3.5–5 μ , terete, 3–6-septate. Agrees with Rav. F. Am. 587; near *Septogloeum* and possibly identical with *Phloeospora mori* (Lev.) Sacc. Sometimes spots are confluent and irregular in older leaves. Conidia sometimes only 20 μ long mingled with others. Does not seem to differ from *C. pulvinata*, Sacc. & Wint. Auburn, 1321, July 22, 1890, on *Morus rubra*.

Cercospora sorghi E. & E. On leaves of *Sorghum halapense*. Montgomery, 2087, Sept. 8, 1891.

Cercospora yuccae Cke. Forming oblong or elliptical dark brown spots on leaves of *Yucca*. Agrees well with Choke's description, but conidia are 1–6 or more septate.

Cercospora vernoniae E. & K. Forming small greyish or greyish purple spots on leaves of *Vernonia angustifolia*. Auburn, Aug.

- 16, 1892, (Richards); 2073, V. noveboracensis, Aug, 29, 1891, (Atkinson).
- Cercospora clavata* (Gerard) Cke. Forming small blackish spots on leaves of *Asclepias obtusifolia*? Auburn, 2425, Aug. 19, 1892 (Richards).
- Cercospora lycopi* E. & E. Forming brownish indefinite spots on leaves of *Lycopus rubellus*. Auburn, 2101, Sept. 2, 1891 (Duggar).
- Cercospora crotonifolia* Cke. Spots suborbicular, greyish or light ochraceous with a narrow blackish or dark border. Hyphae hyphophyllous, very short, from a tuberculate stroma, fuliginous. Conidia cylindrical, $20-40 \times 3.5-5\mu$, 3-septate, hyaline. On leaves of *Croton* sp. Auburn, 1010, Oct. 16, 1889.
- Cercospora cruciferarum* E. & E. Forming dark bordered small white spots on leaves of *Brassica oleracea*. Auburn, 2422, Aug. 29, 1892 (Richards).
- Cercospora galii* E. & Holw. On leaves of *Galium pilosum* var. *punctulosum*, 1318, Auburn, July 22, 1890; also 1230, on *Galium* sp.
- Cercospora penstemonis* E. & K. Forming small dark bordered greyish spots on leaves of *Penstemon pubescens*. Auburn, 2339, Apr. 27, 1892.
- The remaining species of *Cercospora* were nearly all described in Vol. VIII of the Jour. Elisha Mitchell Sci. Soc.
- Cercospora cerasella* Sacc. On cultivated cherry leaves (*Prunus avium*). Auburn, 1968, July 13, 1891 (Newman); Gold Hill, 1835a, Sept. 1890.
- Cercospora zinniae* E. & M. On leaves of *Zinnia multiflora*. Auburn, 2156, summer, 1890.
- Cercospora cercidicola* Ell. On leaves of *Cercis canadensis*. Auburn, 2016, Aug. 7, 1891 (Duggar and Newman).
- Cercospora omphakodes* E. & Holw. On leaves of *Phlox floridana*. Auburn, 1190, June 23, 1890.
- Cercospora personata* (B. & C.) Ell. On leaves of *Arachis hypogaea*. Auburn, 2157, Sept. 7, 1891.
- Cercospora occidentalis* Cke. On leaves of *Cassia occidentalis*. Auburn 1547, and 2128, July 1890 and 91 (Duggar and Atkinson).
- Cercospora diodeae* Cke. On leaves of *Diodea* trees. Auburn, 1987, July 16, 1891 (Duggar and Newman).
- Cercospora tephrosiae* Atkinson. On leaves of *Tephrosia hispida*. Auburn, 2105, Sept. 14, 1891.
- Cercospora truncatella* Atkinson. On leaves of *Passiflora incarnata*. Auburn, 2025, Aug. 26, 1891.

- Cercospora agrostidis* Atkinson. On leaves of *Agrostis*. Auburn, 2036, July 23, 1891 (Duggar and Newman).
- Cercospora citrullina* Cke. On leaves of *Citrullus vulgaris*. Auburn-Sept. 3, 1890.
- Cercospora cucurbitae* E. & E. On leaves of water melon (*Lagenaria vulgaris*). Auburn, 2154, Sept. 10, 1891 (Duggar); also on leaves of "dish rag" squash (*Cucurbita*?) 2154a, 1890.
- Cercospora pachyspora* E. & E. On leaves of *Peltandra alba*. Auburn, 2193, Sept. 26, 1891 (Duggar).
- Cercospora beticola* Sacc. On leaves of cultivated sugar beet (*Beta vulgaris*). Auburn, Nov. 28, 1890.
- Cercospora flagellaris* E. & M. On leaves of *Phytolacca decandra*. Auburn, July 11, 1891 (Newman).
- Cercospora acalyphae* Pk. On leaves and stems of *Acalypha caroliniana*. Auburn, 1998, Aug. 6; 2102, Sept. 12, 1891 (Newman).
- Cercospora polygonacea* E. & E. On leaves of *Polygonum dumetorum* var. *scandens*. Auburn, 2225, Oct. 14, 1891 (Duggar).
- Cercospora lobeliae* K. & S. On leaves of *Lobelia amoena*. Auburn, 2226, Oct. 14, 1891.
- Cercospora rhuina* C. & E. On leaves of *Rhus copallina*, 1178, Auburn, June 30, 1890; 1181, *R. toxicodendron* (same date); 1304, *R. venenata*. Shorter's Station, July 16, 1890; 2014, *Rhus glabra*, Auburn, Aug. 7, 1891 (Duggar and Newman).
- Cercospora aviculare* Winter. On leaves of *Polygonum sagittatum*. Auburn, 2201, Oct. 1, 1891 (Duggar).
- Cercospora liquidambaris* C. & E. On leaves of *liquidambar styraciflua*. Auburn, 2227, Oct. 14, 1891.
- Cercospora anthelmintica* Atkinson. On leaves of *Chenopodium ambrosioides* var. *anthelminticum*. Auburn, 2037, Aug. 27, 1891 (Duggar).
- Cercospora jussiaeae* Atkinson. Auburn, 2159, leaves of *Jussiaea leptocarpa*, Sept. 2, 1891 (Duggar); 2191, *J. decurrens*, Sept. 29, 1891 (Atkinson).
- Cercospora fusimaculans* Atkinson. On leaves of *Panicum dichotomum*. Auburn, 2054, Aug. 15, 1891 (Duggar).
- Cercospora setariae* Atkinson. On leaves of *Setaria glauca*. Auburn, 2120, Sept. 17, 1891 (Duggar).
- Cercospora asterata* Atkinson. On leaves of *Aster*. Auburn, 2365, Nov. 25, 1891.
- Cercospora richardiaeicola* Atkinson. On leaves of *Richardia africana*. Auburn, 2111, Sept. 7, 1891.
- Cercospora alabamensis* Atkinson. On leaves of *Ipomoea purpurea*. Uniontown, 1248, June 12, 1890.
- Cercospora flagellifera* Atkinson. On leaves of *Galactia pilosa*, 2180,

- Auburn, Sept. 9, 1891. 2117, collected Sept. 17, 1891, by Duggar on *Lespedeza*?; seems to be the same species. Auburn.
- Cercospora verbenaecola* E. & E. This was described p. 20 Jour. Elisha Mitchell Sci. Soc., VIII, 1892, as a new species, *C. papillosa*. A later examination of fresh specimens does not seem to show any persistent character which will distinguish it from E. & E.'s species. On leaves of cultivated *Verbena*, 2376, Auburn, Dec 24, 1891.
- Cercospora hydrangeae* E. & E. On leaves of cultivated *Hydrangea*. Auburn, 1013, 1890.
- Cercospora desmodii* E. & K. On leaves of *Desmodium* sp. Uniontown, 1241, July 12, 1890; also on cultivated *Desmodium* (Florida clover) Auburn.
- Cercospora solanicola* Atkinson. On leaves of *Solanum tuberosum*. Auburn, 1922, June 19, 1891.
- Cercospora violae* Sacc. Auburn, 1946, on leaves *Viola odorata* July 25; 2372, *V. cucullata* Dec. 14, 1891.
- Cercospora nymphacea* E. & E. On leaves of *Nymphaea odorata*. Auburn, 2160, Sept. 2, 1891 (Duggar).
- Cercospora saururi* E. & E. On leaves of *Saurus cernuus*. Shorters Station, 1303, July 16, 1890.
- Cercospora rubi* Sacc. On leaves of *Rubus villosus*? Auburn, 1130, Dec. 1889. Common, and collected at other times.
- Cercospora boehmeriae* Pk. On leaves of *Boehmeria cylindrica*. Auburn, 2321, Nov. 7, 1891; also collected at Shorters Station July 16, 1890.
- Cercospora hydrocotyles* E. & E. On leaves of *Hydrocotyle umbellata*. Shorters Station, July 16, 1890.
- Cercospora mali* E. & E. On leaves of *Pirus malus*. Gold Hill, 1890.
- Cercospora elephantopodis* E. & E. On leaves of *Elephantopus tomentosus*. Auburn, 1179, June 30, 1890.
- Cercospora atramaculans* E. & E. On leaves of *Cassia tora*. Auburn, 2129, Sept. 10, 1891.
- Cercospora cruenta* Sacc. On leaves of *Dolichos sinensis*, Auburn, 1238, July 8, 1890; *Phaseolus vulgaris*, 1236, July 18, 1890.
- Cercospora viticola* (Ces.) Sacc. Common on cultivated grape leaves. Auburn. Also on the native species of *Vitis*.
- Cercospora petersii* (B. & C.) Atkinson. On leaves of *Smilax glauca*. Auburn, 2375, Dec. 20, 1891; Shorters Station 1288, July 16, 1890.
- Cercospora ludwigiae* Atkinson. On leaves of *Ludwigia alternifolia*. Auburn, 2190, Sept. 29, 1891.
- Cercospora d. virginianae* Atkinson. On leaves of *Diodea virginiana*. Auburn, 2186, Sept. 26, 1891 (Duggar).

- Cercospora crinospora* Atkinson. On leaves of *Rhynchospora glomerata*. Auburn, 2034, Aug. 27, 1891.
- Cercospora atramarginalis* Atkinson. On leaves of *Solanum nigrum*? Auburn, 1359, 1890.
- Cercospora tropaeoli* Atkinson. On leaves of *Tropaeolum*. Auburn, 2110, Sept. 7, 1891.
- Cercospora tessellata* Atkinson. On leaves of *Elusine aegyptica*. Auburn, 2306, Nov. 6, 1891.
- Cercospora seriata* Atkinson. On leaves of *Sporobolus asper*. Auburn, July 24, and Aug. 7, 1891 (Duggar and Newman).
- Cercospora davisii* E. & E. On leaves of *Melilotus alba*. Uniontown, 1268, July 12, 1890.
- Cercospora althaeina* Sacc. On leaves of *Althaea rosea*. Uniontown, 1253, July 12, 1890.
- Cercospora althaeina* var. *modiolae* Atkinson. On leaves of *Modiola multifida*. Auburn, 1253a; 1890.
- Cercospora silphii* E. & E. On leaves of *Silphium compositum*. Auburn, 1198, June 30, 1890.
- Cercospora thaspiae* E. & E. On leaves of *Angelica hirsuta*. Auburn, 1540, July 22, 1890; 2042, July 23, 1891 (Duggar and Newman).
- Cercospora depazeoides* (Desm.) Sacc. On leaves of *Sambucus canadensis*. Auburn, Sept. 9, 1890.
- Cercospora sagittariae* E. & K. On leaves of *Sagittaria variabilis*. Auburn, July 24, 1891 (Duggar and Newman).
- Cercospora bolleana* (Thüm) Speg. On leaves of fig (*Ficus carica*). Auburn 1772, Sept. 4, 1890.
- Cercospora clitoriae* Atkinson. On leaves of *Clitoria mariana*. Auburn, 2069, Aug. 29, 1891.
- Cercospora effusa* (B. & C.) Ellis. On leaves of *Lobelia amoena*. Auburn, 2214, Oct. 11, and Nov. 3, 1891.
- Cercospora dolichi* E. & E. On leaves of *Dolichos sinensis*. Uniontown, July 12, 1890.
- Cercospora diospyri* Thüm. On leaves of *Diospyrus virginiana*. Auburn, 2254, Sept. 26, 1891 (Duggar).
- Cercospora sordida* Sacc. On leaves of *Tecoma radicans*. Auburn, Sept. 26, 1891 (Duggar).
- Cercospora fuscovirens* Sacc. On leaves of *Passiflora incarnata*. Auburn, 2198, Oct. 2, 1891 (Duggar).
- Cercospora jatrophae* Atkinson. On leaves of *Jatropha stimulosa*. Auburn, 1171, July 2, 1891.
- Cercospora macroguttata* Atkinson. On leaves of *Chrysopsis graminifolia*. Auburn 2138, July 11, 1891.

- Cercospora pinnulaecola* Atkinson. On leaves of *Cassia nictitans*. Auburn, 2197, Oct 1, 1891 (Duggar).
- Cercospora erythrogena* Atkinson. On leaves of *Rhexia mariana*, 1541, July 22, 1890; *R. sp.* 1819, Oct. 1890; *R. virginica*, 2066, Aug. 29, 1891.
- Cercospora rigospora* Atkinson. On leaves of *Solanum nigrum*? Auburn, 1225, July 5, 1890.
- Cercospora catenospora* Atkinson. On leaves of *Sambucus canadensis*. Auburn, 2045, Aug. 27, 1891.
- Cercospora erechitites* Atkinson. On leaves of *Erechtites hieracifolia*; on dead parts of the leaf, also on angular spots. Auburn, 2303, Nov. 5, 1891 (Duggar).
- Cercospora gossypina* Cke. On leaves, bracts and cotyledons of *Gossypium herbaceum*. Common throughout the State. Probably conidial stage of *Sphaerella gossypina* Atkinson.
- Cercospora liriodendri* E. & Hark. On leaves of *Liriodendron tulipifera*. Auburn, 1951, July 11, 1891 (Newman).
- Cercospora cephalanthi* E. & K. On leaves of *Cephalanthus occidentalis*. Auburn.
- Cercospora oenotherae-sinuatae* Atkinson n. sp. Spots minute, with an indefinite colored border and a whitish center. Hyphae amphigenous, short, few in a tuft, spreading, $35-40 \times 4-5\mu$, flexuous, brown, septate, ends truncate where spores are delimited. Conidia cylindrical, tetete, hyaline, 3-6-septate, $35-70 \times 3.5-4\mu$. On leaves of *Oenothera sinuata*. Auburn, Sept. 4, 1890.
- Cercospora muhlenbergiae* Atkinson n. sp. Hyphae amphigenous, tufts scattered over the leaf, bases of the hyphae in the tuft rather closely crowded and more or less spreading above, flexuous, notched, zigzag, brown, septate, $70-140 \times 3.5-4\mu$. Conidia hyaline, narrowly lanceolate, 1-5-septate, straight or inequilateral, $25-35 \times 4-5\mu$. On leaves of *Muhlenbergia diffusa*. Auburn, Oct. 3, 1891.
- Cercospora scolecotrichoides* Atkinson n. sp. Hyphae fasciculate making numerous black points scattered on the light green or yellow portions of the leaves, spreading, brown, flexuous, nodulose, sometimes branched, $100-200 \times 4-6\mu$, septate. Conidia terminal or lateral as in *Cercospora* when the hypha grows beyond, obclavate, fuliginous, abruptly narrowing into a long terminal portion, 3-septate, $30-50 \times 8-10\mu$. Near *Scolecotrichum graminis* which it resembles in general appearance. On languid leaves of *Arundinaria tecta*. Auburn, Oct. 28, 1891 (Duggar).
- Cercospora persicae* Sacc. On leaves of *Prunus persica*, forming delicate mildewed areas. Auburn, 1792, Oct. 30, 1890 (Atkinson); 2206, Oct. 1, 1891 (Duggar).

- Cercospora pycnanthemii* Atkinson n. sp. Spots hypophyllous, large, angular, limited by the veins of the leaf, presenting a mildewed appearance from the numerous conidia. Upper side of the leaf marked by an indefinite pale spot. Hyphae hypophyllous, arising in large numbers from a small stroma which is light yellow.
- Helminthosporium ravenelii* Curt. & Berk. On inflorescence of *Sporobolus indicus*. 1186, Auburn, June, 1890.
- Helminthosporium macrocarpum* Grev. Forming velvety patches on dead twigs of *Quercus*. 2332, Auburn, Nov. 8, 1891.
- Helminthosporium inconspicuum* C. & E. On living and languid leaves of *Secale cereale*. 1908, Auburn, Feb. 19, 1891.
- Helminthosporium avenaceum* Curt. On dead oat straw (*Avena sativa*) associated with *Puccinia rubigo-vera* and *Colletotrichum lineola*. Auburn, 1925, June 26, 1891.
- Helminthosporium turcicum* Pass. On languid leaves of *Sorghum halapense*, 1278, Mobile, July 24, 1890; 2178, on *Cinna arundinacea*, Auburn, Sept. 15, 1891; 1175b on *Elymus*, July 5, 1890, the latter associated with *Leptosphaeria elymi* and *Septoria bromi*.
- Helminthosporium leersii* Atkinson n. sp. Spots irregularly oblong, amphigenous, at first dark brown, then dirty white with dark brown border. Hyphae amphigenous, brown, irregularly nodulose or flexuous, $200-350 \times 4-6\mu$. Conidia slightly curved, 5-9 septate, elliptical, faintly fuliginous. On leaves of *Leersia virginica*. Auburn, 2103, Sept. 13, 1891. Near *H. turcicum* but hyphae and conidia more slender.
- Helminthosporium tuberosum* Atkinson n. sp. Hyphae forming distinct and distant tufts, spreading, $100-300 \times 10-12\mu$, black, septate, usually lighter colored at the apex, irregularly curved or flexuous, smooth. Conidia oblong, rarely subclavate, olivaceous, evenly colored, straight, thick walled, 4-7-septate, $50-100 \times 12-14\mu$. Hyphae arising from a tuberosus erumpent stroma, which is black outside but hyaline within and composed of small cells. On putrescent culms of *Secale cereale*. Auburn, 2104, Sept. 14, 1891 (Newman).
- Helminthosporium flagelloideum* Atkinson n. sp. Spots indefinite, black, Hyphae amphigenous, few in a cluster, stout, fuliginous brown, flexuous, nodulose, 4-8-septate, $50-120 \times 7-9\mu$. Conidia fuliginous, base elliptical, upper end prolonged into a long hyaline slender flagellum much as in *Cercospora crassa*, 7-9-septate, $70-150\mu$. On leaves of *Panicum* sp. Auburn, 1906, Sept. 1890.
- Heterosporium gracile* (Wallr?) Sacc. Forming suborbicular light brown spots with a broad dark brown border on leaves of *Iris* (cultivated). Auburn, 1995, Aug. 1, 1891 (Duggar).

Heterosporium interseminatum (B. & R.) Atkinson.

Heterosporium sambuci Earle. Bull. Torr. Bot. Club. XXIX, 1897. On dead stems of herbs and shrubs, as *Sambucus*, *Solidago*, etc., 2389, 2166, Auburn, 1891.

Sphacelia tripsaci Bornet (*Spermoedia tripsaci* M. A. Curtis). On *Tripsacum dactyloides*. Gallion, Sept. 20, 1894 (Duggar).

Spermoedia paspali (Schw.) Fr. On *Paspalum laeve*. Auburn, Sept. 14, 1891 (Duggar).

Tetraploa ellisii Cke. Forming effuse black patches on culms of *Arundinaria tecta*. Auburn, 2163, Sept. 19, 1891 (Duggar).

Tetraploa divergens Tracy & Earle. Forming blackish elongate patches on languid leaves of *Panicum agrostoides*. Auburn, 2243, Oct. 15, 1891.

Triposporium elegans Corda. On leaves of *Rubus villosus*, attacked by *Meliola manca*. Auburn, 2308a, Oct. 30, 1891.

Isaria verticillata Atkinson n. sp. Stromata scattered or in tufts, cylindrical, simple and small or branched and larger, 0.25–1 mm high by 10–35 μ in diameter, everywhere sporogenous. Hyphae coalesced so that the septa occur at definite and regular and common intervals. Upper portions of segments enlarged outwards bearing conidia in compact verticels. Conidia navicular or a few ovate, 8–14 $\times$ 4–6 μ , hyaline, with one large oil drop. On under side of leaves of *Quercus stellata*, forming white patches. Auburn, 2199, Nov. 11, 1891 (Duggar).

Stilbum versicolor Pat. On dung of a small bird, on tomato vine. Stromata gregarious, 2–3 mm long, little attenuate above, apex extending into a broad columella. Head globose, light reddish yellow, or cream colored. Conidia ovate to short oblong, minute, 2–3 $\times$ 1.5 μ , faintly glaucous. Stipe whitish to very faintly yellow. In Patouillard's plant the heads are first greenish, then reddish brown, spores spherical. Otherwise it is identical and these differences do not seem sufficient to separate it. Auburn, 1571, Aug. 14, 1890.

Stilbum arcticum Berk.? On dead *Stereum versicolor*. Auburn.

Stysanus stemonites (Pers.) Corda. On decaying rose leaves. Auburn, June, 1890.

TUBERCULARIEAE.

Fusarium solani (Mart.) Sacc. On dead tubers of *Solanum tuberosum*. Athens, 1890 (Newman).

Fusarium vasinfectum Atkinson. In vascular ducts of stems of *Gossypium herbaceum*, Mathews, Hope Hull, Selma, etc.; *Abelmoschus esculentus*, Athens, 1891.

- Fusarium oxysporum* Schlecht. On bolls of *Gossypium herbaceum* and bark of *Melia azedarach*. Common.
- Fusarium oxysporum* Schlecht var. *lycopersici* Sacc. On internal portions of fruit of *Lycopersicum* (tomato). Auburn, 1890.
- Fusarium ustilaginis* K. & S. On *Ustilago* avenue. Auburn, 1891.
- Fusarium roseum* Link. On staminate aments of *Alnus*. Auburn, 1082, Jan. 1890.
- Fusarium graminum* Corda. In seeds and glumes of living *Paspalum digitatum* forming prominent roseate or scarlet masses. Auburn, 1821, Nov. 1890.
- Microcera coccophila* Desm. On coccids? on living branches of *Quercus aquatica*. Auburn, Nov. 12, 1891.
- Epicoccum neglectum* Desm. On dead leaves of *Avena sativa* and other hosts. Often with *Cladosporium herbarum*. Auburn.
- Epicoccum vulgare* Corda. On dead portions of leaves of *Elymus*. Auburn, 1175e, July 5, 1890. With *Leptosphaeria elymi*, etc.
- Cerebella paspali* Cke. On glumes of *paspalum platycaule*. Auburn, 2091, Aug. 1891.
- Spegazzinia tricophila* Atkinson n. sp. Sporodochia not distinct, spores crowded or scattered; mycelium creeping over trichomes of *Rubus villosus*, hyaline. Fertile hyphae short, slender, erect, $20-25 \times 3\mu$, hyaline, terminating in an expanded cuboid club, which is four lobed, this making the conidium. Normal conidia more or less quadrate, brown, deeply constricted laterally to a central piece, $15-20\mu$ in diameter, lobes echinulate. Auburn, 2308b, on leaves of *Rubus villosus*, accompanying *Meliola manca*.
- Volutella setosa* (Grev.) Berk. On dead stems of various plants. Auburn 2384, 1891.
- Volutella tectaeicola* Atkinson n. sp. Spots large, light brown, affecting large areas of end or margins of leaves, or in oblong areas, limited from the green portions of the leaves by a purple brown border. Sporodochia minute, thickly scattered, black, $35-70\mu$ in diameter, elevated $25-40\mu$ above the surface, bordered by black stiff setae, $40-70 \times 4-5\mu$. Conidia cylindrical, straight or sometimes curved, ends sharp pointed, hyaline, continuous; basidia crowded. On leaves of *Arundinaria tecta*. Auburn, 2050, Aug. 15, 1891. Near *Colletotrichum*. (Duggar).
- Volutella acalyphae* Atkinson. Sporodochia black, erumpent, $80-100\mu$ in diameter, setae black, strongly septate, irregular, $150-210 \times 4-7\mu$, sometimes strangulate and breaking off. Conidia hyaline, falcate, fusoid, continuous, $25-30 \times 2.5-3\mu$; smaller and probably younger ones $10-15 \times 2\mu$, straight; basidia slender, $35-50 \times 1.5-2\mu$, hyaline. Auburn, 2158, on stems of *Acalypha caroliniana*, Sept. 12, 1891 (Newman).

Volutella oxyspora Atkinson n. sp. Sporodochia large about 200μ , in diameter, hemispherical, black; setae black, pointed, $100-150 \times 4-5\mu$, divergent. Conidia falcate, fusoid, hyaline, continuous, $25-30 \times 2.5-3\mu$; basidia short from a fuliginous stroma, pale fuscous. On decaying cultivated beet. Auburn, Dec. 1890.

Frankia alni (Wor.) Atkinson. Forming galls on roots of *Alnus*. Feb. 1892.

Frankia ceanothi Atkinson. Forming galls on roots of *Ceanothus americanus*. Auburn, 2347, Nov. 1891.



ERRATA.

On page 9 for *Rosellina* read Rosellinia.

On page 14 for *declina* read diclina.

On page 20 for *eagrostidis* read eragrostidis; and for *Eagrostis* read Eragrostis.

On page 28 for *palchra* read pulchra.



